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THE PRESENT POSITION OF EUROPEAN POLITICS.

Part II.—France.

We have seen in a previous article* how Germany and Austria are bound over to keep the peace, and will do nothing warlike unprovoked; how England is past her fighting days, unless moved by a very powerfully irritating cause; how Russian policy alone is not to be foreseen, and how the erratic impulses of the Tsar may affect the future of Europe. We have now to consider the same phenomena from the French point of view, and it will also be my duty to try to make plain in what way the personality of the leading Frenchmen may influence the policy of their country. Thoroughly as force now reigns in Europe, at least three of the great Powers, the first three of the four which have just been named, whatever be the amounts they spend upon their armies and navies, are now as peaceable in general intention as the United States. Italy obviously will never begin a war, and the only powers that are in the least likely to provoke one are France and Russia. What of France? It being admitted that the French peasant or the ordinary French elector is generally of a peace-loving and thrifty disposition, is there in France any man who is likely to play upon national vanity in such a manner as to hurry on a war? A distinction must here be drawn between words and acts. A large proportion of the governing men of France come from its southern provinces, and the Gascon and Provençal are proverbial for the use of language which in England is called Jingo, in Northern France Chauvinistic, but in Southern France is regarded as the ordinary speech of the people. The French Patriotic League not only talks big, but writes big, and publishes statements from which it might be gathered, were they to be taken literally, that Europe is upon the brink of a general war. It will already have been seen, from the necessary anticipations of the first article of this series, that I do not share the view that it is probable that France

* "The Present Position of European Politics. Part I.: Germany."—*Fortnightly Review*, January, 1887.

will voluntarily enter upon war. On the contrary, I go so far as to think that, if Russia were to begin war with England, or with Austria, or with England and Austria combined, France would, if possible, look on, content to reap profit from it at a later moment, if she could do so.

The Goblet cabinet has shown by the official declaration of its chief that it is anti-Chauvinist, although it contains one member supposed to be of a Chauvinist turn. The declaration made by ministers on taking office said nothing of Foreign Policy, except in vague and general terms, and only named the army incidentally. Nevertheless the French and German newspapers are full of rumours of impending war. It is said that M. de Courcel, the ex-ambassador at Berlin, gave as his reason for refusing the Foreign Office, that he "would not be the Duc de Gramont of the Republic." Yet the whole of the persons who count in France, have counted latterly, or are likely to count, are, with one possible exception, admittedly peaceable. The President, who bears a much closer resemblance than does Mr. Bright to the ideal member of the Society of Friends; M. de Freycinet, a model of cautious statesmanship; M. Spuller, German not only by race, but by turn of mind; M. Clémenceau, enlightened, friendly to England, and by no means pro-Russian—all these men are most unlikely to countenance a policy of adventure. M. Ferry, who may come back again some day, burnt his fingers in Tonquin, and is now as cautious as M. de Freycinet himself. The one exception, of course, is General Boulanger, and it must be admitted not only that he excites in Germany and in Russia fears or hopes as the case may be, but that he arouses very general public attention even in France. The personality of the man is strong. He has come very suddenly to the front. Gambetta, indeed, used to speak of him as one of the four best officers in France, but he put him rather below than above at least two of the four. General Boulanger is still quite young; he is very handsome, and a good speaker. He owes his advancement to M. Clémenceau, but he has rather eclipsed his patron, who indeed never was especially popular. General Boulanger is commonly supposed to have violated the gentlemanly code of honour, but it is universally admitted that what has happened has not done him any harm. I shall be disbelieved when I state simply that his personal popularity in France is greater than that enjoyed by any man since Napoleon was at the height of his power, with the possible exception of Lafayette at the moment of the Revolution of 1830. General Boulanger excites a good deal of prejudice in society, but society in France counts less than it does in any other country in Europe. He is probably more popular with the Army than was the Prince-President in 1849 and 1850, and the dislike felt for him by a large number of the superior officers was felt also, and

even more intensely, for the Prince-President. So popular is he with the private soldiers and, generally speaking, with the great majority of the electors, that it may be said that no one else in France, with the doubtful exception of old M. de Lesseps, in comparison with him, is popular at all. All the politicians are afraid of him, and yet, somehow or other, he is never mentioned without a smile. In spite of his extraordinary popularity no one takes him quite seriously, and the newspapers are able to ignore his real standing with their readers and to go on writing of him as a ring-master, which they pretend he resembles. It must be admitted that the circus element is not wanting in General Boulanger's composition. He is not only a much advertised man; he has done a good deal to advertise himself. At the same time he is an able War Minister, and the constant kindness which he has shown to the private soldier is probably an honest kindness, for a calculation of the good results of which towards himself he cannot with any fairness be charged. Although General Boulanger's popularity in France is far greater than that enjoyed by Gambetta in his lifetime, he has never attained in European estimation the same position, nor does he deserve it. But in Germany there is an uneasy feeling with regard to General Boulanger's popularity, and by some Germans and by the German newspapers he is thought to be a War Minister who means war. There never was a greater mistake made than to think that General Boulanger is warlike. He seems to me to have done his duty as War Minister with no special view of undertaking an aggressive war, but, on the contrary, to have shown, in constantly limiting the expeditions intended to conquer so-called "colonies," a prudence which is laudable from every point of view. I cannot agree with those who think that the strong personality of General Boulanger in any way affects the situation of France in Europe and her probable future. A very considerable time ago I asked a friend of mine who was going to Paris to find out for me whether General Boulanger, who was beginning to excite attention, was a man, a soldier, a mountebank, or an ass. The report was of no great practical value because it was to the effect that the "Bonaparte without a victory" was at once all four. But although probably, for the reasons which I have given, an excellent War Minister, General Boulanger has shown by his last considerable speeches that his English blood is strong in him and that he is not a man, as the French say, "to break windows."

I gave in my former article my reasons for thinking that while France is not likely to move first in a warlike sense, she is, for defensive purposes, very strong. There are many drawbacks to her position. The instability of her Governments, although it perhaps has some slight influence in preventing a cessation of financial waste,

does not check her military preparations. The durability of the Republic itself is often called in doubt. The Republic may be looked upon as being more safe against internal revolution than would be any other form of government that could be set up, and as being, indeed, quite certain to endure as long as peace itself endures. A foreign observer of France must come now to believe that what are known as the old parties which compose "the Right" are very weak. M. Raoul Duval's attempt to form a new Conservative party which should thoroughly support the Republic has been a failure, because it did not suit the personal declarations of the leaders of the so-called Conservative party; but nevertheless he expressed the view of almost all the reasonable men in the Conservative ranks. There are many of those who are ridiculously labelled "Orleanists" by the "Republicans," who, if they wanted a constitutional king at all, say that they would as willingly take M. Poubelle as the Comte de Paris. "M. Poubelle and his wife are popular," they declare; "he is better-looking than the Comte de Paris, and she is nicer-looking than the Comtesse, and more French; they already live in the Pavillon de Flore, the temporary *préfecture de la Seine*, that is in the Tuileries, so that they would not have to move." But then these gentlemen, as may be gathered from their irony, though classed as Monarchists, really prefer the Republic. The division of the Monarchists into clerical Bonapartists, democratic and anti-clerical Bonapartists, Legitimists and Constitutional Monarchists, some clerical and some non-clerical, would have fatally weakened the Monarchic party if it had not in any case been so weak as hardly to be worth taking into account. Those who for one reason or other, whether they represent what is called Orleanism or what is called Legitimacy, are in favour of the restoration of the House of France are far stronger than the Bonapartists, but they owe their nominal strength in the Chamber and the number of their supposed supporters among the electorate only to the fact that they poll a large Catholic vote, a large economic vote, and a large discontented vote—votes which are in no sense truly monarchical. The probability is, that if ever France should want a master, a new man will have a better chance than would any member of the families that have reigned in France. As the *Journal des Débats* has lately said, the moderate Conservatives with the Comte de Paris at their head, if he pleases to be there, will separate from the de Cassagnacs, who may, if they please, find a saviour of society in the "dynasty of the Boulangers." If Prince Victor should ever be within a measurable distance of the French throne, it will not be through any help that his party gives him, but because he is a sharp, pushing, good-looking man. That there should exist persons desirous, as the Comtesse de Paris is said

to be, of ascending or of sharing the French throne, is in itself a singular fact. It may be safely asserted that the existence of a king in France would at the present moment, and in any state of French feeling that can be foreseen, only serve to strengthen the revolutionary party. No government in France is likely, for any long time together, to be more conservative than the existing Republic has been during the last fifteen years, and all true French Conservatives admit in private, whatever language they may hold in public, that the best chance for French society, and the best chance for French religion, against anarchy or spoliation, lies in a moderate Republic. The consciousness of this would, if they were free agents, lead them to join and help the moderate Republican party. There is a great deal of ignorance upon this subject amongst ourselves. The natural regret which some feel for the fate of the Empress Eugénie, the ties of others to the excellent members of what is known in England as the Orleans family, even since it has become the family of France, and the somewhat widely-spread feeling of prejudice in favour of a constitutional Monarchy as compared with a Republic, all concur, with irritation at certain recent political action on the part of France, to produce a feeling against the French Republic. That feeling very naturally takes the form of a belief that somehow or other the Republic is to be brought to an end. All governments in Europe, and several in America, are now in this position, that they may at any moment be upset by revolutionary forces, and the French Republic is not beyond the danger. It is conceivable that the Socialists may upset the third Republic. It is also possible that they may indirectly overturn it by making the government itself a Socialistic government, and so producing a violent reaction. But in my opinion France is less exposed to immediate danger from the Socialists than are several of the Monarchies, and I expect to see the Republic, unhurt either by Socialism on the one side, or by Monarchism on the other, last as long as peace is maintained.

Even in 1848 the weak Second Republic proved itself for a time better able to resist violence than was the Constitutional Monarchy, although the latter was no doubt weakened by the extreme limitation of the suffrage. No Republic would have fallen so easily as fell the Monarchy of July:—no Monarchy could have survived even for a time the days of June. At the moment of that remarkable insurrection the Socialists were stronger in France and possessed abler leaders than at the present time, and it is an extraordinary testimony to the power even of a weak Republic that it should have crushed them, although indeed it perished later on. The French Third Republic is not likely to die of Socialism, or to die at all except by war.

The English people are—thanks to the English press—so much better informed upon foreign affairs than are the people of other

countries, and are in fact so well and frequently addressed upon the subject by thoroughly competent men, that only prejudice can account for the mistaken view which widely prevails in England among the wealthier classes as to the durability of the Republic. The expulsion of the Princes from France was all but unanimously, if not quite unanimously, condemned by the English Press. If it had been simply condemned as unjust, I should have had nothing here to say, because I am here not expressing opinions upon what is just, or what is unjust, or giving my personal preferences, but attempting only to state facts. The English newspapers did not content themselves with arguing that the measure was unjust, but almost all of them went on to prove by the most conclusive arguments that it was inexpedient from the point of view of the French Republic. This is an excellent example of the class of delusions of which I speak. It has turned out that the French Republicans knew their own business best, and that the Conservative reaction which a year ago was shown by the results of elections to have reached a considerable height, has been checked by the expulsion of the Princes. The French electors, as was notably displayed in the recent elections in the moderate departments of the Nord and Manche, and the Conservative district of Belfort, have welcomed what they regard as a necessary act of national dignity and of commendable vigour.

We saw just now that General Boulanger is not likely to be any especial danger to peace. Is he likely to be a danger to the Republic? I have said that in the event of France desiring a master, she is more likely to look to a new man than to a member of the late royal families; and, when this is said, people begin to ask, with that attraction which is always felt for the element of personality, "Have you such a person in view?" I have in view, not the present War Minister in particular, but the Generalissimo of the French forces in the event of war, whenever that may come. France is very unlikely to be badly beaten in the next war, for the reasons which I have given in the article upon Germany. If, however, she is to have any chance of success, her Ministry must trust the best general that they can find, and let him virtually assume a dictatorship during the continuance of the war. A Generalissimo, thus placed with full powers at the head of an army of some four millions of men, may be successful. If so, all will admit that the Republic will run a danger through his success. If he is not successful, the strong probability is that France will not be greatly driven back within her frontier, and to some extent will be able to hold her own, with an ever-increasing amount of suffering caused by the pressure of taxation, and the withdrawal of men from agriculture and from trade. If the Generalissimo has been fairly cautious, is he not likely, even in these circumstances, to be almost as formidable a person to his colleagues as he would be in the event

of a successful war? In case, however, of a severe defeat of France, the Republic would certainly be upset in favour either of the House of France, or of some individual who had been less compromised in the failure than had others; some general, for example, who had made a gallant stand. I cannot but think that a calm observer must fear that war, either successful or unsuccessful, must be fatal to the French Republic. Not necessarily in name, however; not even probably in name. The next man who upsets the French Republic will, if he is a prudent man, retain Republican forms.

Under ordinary circumstances, that is to say, supposing that there is no war soon, General Boulanger will not rise higher than he has already risen. With his popularity, with his face and figure, he would have a good chance of being elected President if the election of President were by a national vote; but he has little or none as matters stand, the election being made, as is well known, by both Houses sitting together in Congress. Like the popularity of the Prince-President in 1850, General Boulanger's popularity is one which lessens as you go upward in the social scale. Those who wish to know his weaker side will find it described in an article lately written by M. Cherbuliez (under his other name of Valbert) on "M. Cambon." It was the circus-master's side of General Boulanger that came out in Tunis, but during the war of 1870 he showed that he was a brave colonel, and lately, as minister, he has proved that he possesses both sense and prudence, though "he is only the more dangerous when he is prudent" is the observation made to me by Republican politicians. General Boulanger's popularity has survived his disavowal of the d'Aumale letters, but his enemies lately thought that they had him on the hip. An attack was made upon General Boulanger and M. Clémenceau and others with regard to the circumstances under which Dr. Cornelius Hertz received the cross of a Grand Officer of the Legion of Honour. This foreign gentleman was stated to be a shareholder in *La Justice* and a subscriber to M. Clémenceau's election fund, as well as the entertainer of General Boulanger. It seems to have been thought by the latter's enemies that he would not survive a financial scandal, but, unfortunately for them, they failed to prove his connection or that of M. Clémenceau with any discreditable financial transactions. No doubt there is a good deal of monetary corruption at Paris, for, with the exception of the short-lived Second Republic, the Restoration was the last pure governmental period in France. The Monarchy of July, the Second Empire, and the Third Republic have all been marked by considerable financial scandals, but M. de Freycinet's enemies admit that his hands are clean, and General Boulanger's opponents failed to show that his connection with Dr. Hertz, even assuming for the sake of argument that there was anything wrong about the schemes

of Dr. Hertz, was any closer than that of M. de Freycinet himself, or than that of General Menabrea, the Italian Ambassador. The net result of the efforts of General Boulanger and of his enemies has been that, whilst he is still a young man, the General's popularity greatly exceeds that of the next most popular Frenchman, who has been far more years before the country.

M. de Lesseps cannot well be Generalissimo; General Boulanger could and would be Generalissimo if there were war at any short interval from the present time. Some suppose that there may be civil commotion in France, and that he may be the General who will put it down, and that in this way, as well as in war, there may be danger to Republican institutions. In my opinion that is not so. If there should be civil troubles, put down by force, the General who puts them down will have incurred violent resentment and will not be popular enough with the whole country to found for himself a dictatorship, supposing that he wished to do so. But with war it is different. Whilst an unlucky war might even restore the House of France, and a doubtful war might produce a dictatorship, a successful war would give to the Generalissimo who brought to France Alsace or Belgium, a supreme power veiled under Republican forms. It is certain that the next French Cæsar will have no arch-chancellors in breeches and silk stockings about him, and it is probable that he will be styled President of the Republic. But the virtual autocracy of a strong man is not by any means out of the question.

In spite of General Boulanger's present popularity, it is quite possible that within a few years, as he grows older, he may be forgotten. In France men, even useful men, are thrown aside more easily and more completely than is the case with us in England. In England almost all the men able and willing to give useful service to their country are "in," or "out," and certain to "come in next time;" otherwise they are "in the running," to use our most expressive phrase. In France, not only are the declared partisans of the House of France, or of the Bonapartes, excluded, as well as men, however remarkable, who have failed, as, for example, M. Ollivier, but even men such as M. Léon Say, perhaps the most eminent of French statesmen. In France, M. Léon Say seems to be looked upon as destined never again to hold real power, for no sufficient reason that any Englishman can see. The men of small compromises and of expedients hold on the best, or those of extraordinary caution, like that three-times Minister, "the little White Mouse."

Given not the fact, but a belief on the part of the President and of the more cautious of his advisers, that war would upset the French Republic, we must cease to wonder at the refusal of a formal alliance with Russia, and we must expect that, whatever may be the language used in various countries, peace will last. The understanding between

France and Russia was in the autumn strong enough, without any formal alliance, to produce in many respects most of the consequences of a real alliance. The pressure of the confederates at Constantinople was immensely strong, and one noticeable fact about it was that, to judge by the attitude of the German Ambassador there, Prince Bismarck did not appear to mind it in the least. In Christmas week there suddenly arose the story of a Russo-German alliance, which was believed, because not contradicted at Berlin or St. Petersburg, but only at Vienna. Just as there was in the autumn no formal alliance with France, so there is now no formal alliance with Germany on the part of Russia. Prince Bismarck and the Russian Emperor both gain by the assertion being made, but Prince Bismarck must contrive to contradict it at Vienna, for he could not tolerate that disruption of the Austrian empire which would be caused by the revelation of an alliance which, if complete and formal, would be really directed by Russia against the Austrian policy in the East. The Russians have set the report going at Constantinople that the English Conservatives now agree with the English Liberals that the possession of Constantinople by Russia would not be a danger to this country. They tell the Turks that England is now altogether indifferent to their fate, and that the only chance for them, if they wish to avoid absorption into Russia, is to be what is called good neighbours; that is, to allow Russia absolutely to direct their policy. With the apparent assent of Germany, which desires at all hazards to avoid a war, the Sultan is rapidly coming to play the part of a Bey of Tunis to Russia's France. At the same time the private relations between Paris and Berlin are not of the nature which might be expected from the recent coquetting between Paris and St. Petersburg. Whilst the first-class clerks whom the French Foreign Office sends to Berlin as Ambassadors now no longer draw the Foreign Minister's policy from the German Chancellor, yet there has been no apparent change in the good private relations which exist between the countries, both at Paris and at Berlin. Count Münster is not an ambassador in whom Prince Bismarck confides, and therefore it is the communications at the Berlin end which count; but M. de Courcel met with no serious difficulties during his Berlin residence, and the same has been the case, I believe, with M. Herbette. Although people in this country are inclined to flatter themselves that Germany must be really friendly to Great Britain at all times, yet even as late as when Lord Salisbury was Prime Minister, in 1885, the relations between France and Germany were distinctly better than the relations between Germany and England. Sir E. Malet has been able to some extent to change this state of things, but it is a fact that for some years France was taking her policy from Berlin, whilst England was too proud to do so, and a good deal of friction was the

result. The personal relations between Prince Bismarck and Lord Ampthill were always excellent, but Lord Ampthill was not allowed to bend the knee, and the dislike which his attitude occasioned fell not upon himself, but upon the country which employed him. Lord Rosebery was looked upon as being very German, and his tenure of office coincided with a great increase in the military spirit of France, that led to an attitude of independence on the part of the latter power. While no breach in the relations of Paris and Berlin has yet occurred, and while Germany will avoid one as long as possible, the relations with England have become more close.

I see no occasion to modify the estimates of the relative armed strengths of France and Germany, which I ventured to make in drawing some comparison between them in the first article of the present series. The French army is becoming more democratic, whilst the German army in this respect is not undergoing change. The one-year volunteer system in Germany is so carefully regulated that its effects upon all sides are excellent. In France, abuses have from the first crept in, and the consequence is that the system itself will be destroyed, and service for a uniform period made universal. The failure of the one-year volunteer system in France appears to show that the French, although both a warlike and a scientific nation, are behindhand in the combination of science and war, or the application of scientific principles to war. The small number of German one-year volunteers become in nearly all cases most valuable non-commissioned officers, or officers of reserve. This is not the case with the vastly larger number of one-year volunteers in France, and the impatience of the French character displays itself in the probability that the system will be swept away instead of being modified until it becomes good.

Some doubt has been expressed as to the accuracy of my figures. One writer thinks that a reduction of 40 per cent. should be made on the 4,000,000 of French soldiers; but a reduction of 40 per cent. on the actual figure given, which is above 4,000,000, gives that 2,500,000 men of which I wrote as the real force. It is well known that on the twentieth day of war, which is the last day for complete mobilisation, France will have 1,200,000 in the front line, 400,000 in the depots, and all her fortresses full of men, without counting the Algerian and Colonial forces—figures from which the same total of 2,500,000 men is reached.

Much criticism has been aroused in Belgium by what I have said of the military (not the political) prospect of an attack on France by Germany through Belgium. The Belgian writers who treat this subject, such as the editor of the chief organ of opinion at the capital, General Brialmont, and that other distinguished general who, previously to the appearance of my article, had written the series

of leading articles in the *Revue de Belgique*, but who, though signature is the rule in that periodical as in the *Fortnightly Review*, preferred like myself to keep his anonymity,—all think the violation of Belgian neutrality almost certain, and differ from my view, where they differ at all, only because they think the danger is from both sides, and not from Germany alone. This difference does not affect, unless to strengthen, the warning which I addressed to England. The enormous accumulation of supplies of every kind in the entrenched camp of Cologne is of itself enough to military eyes to prove the truth of what I have said in my previous article. Belgium is not disinterested, and it might be said that Belgian arguments are the arguments of alarmists. I am content then to rely upon an almost universal consent of military opinion in disinterested countries. As regards political considerations, I would ask those who believe in the value of the "neutralisation" of Belgium to read the correspondence of 1870, at the time when Austria and Russia declined to support our action in defence of Belgium, until, France being hopelessly beaten, they found that it involved no responsibility. I would also refer them to the Prussian circular of Dec. 3rd, 1870, in which Prussia declared that the Royal Government would "no longer consider itself bound to any consideration of the neutrality of the Grand Duchy" (of Luxemburg) "in the military operations of the German army," and which contains illustrations of the difficulty Luxemburg and even Belgium would experience in maintaining their neutrality in the event of another great war.

France is forced to trust solely to her army and her navy for her strength, for she cannot rely upon friendships. The Emperor of Russia detests the French Republic, but is of course very willing to make a certain use of the military power of France for his own ends. The Sultan merely follows the Russian lead; but where in Europe can we say that France now has real friends? As regards governments, nowhere; for the traditional friendship of Sweden for France is checked by the understanding between France and Russia, Sweden's hereditary foe. In the event of a general war, Sweden would be compelled to make choice between her old sympathies, and her desire to attack Russia in her own former province of Finland, and would probably be neutral, as she was under even more powerful temptation during the Crimean War. Austria follows Germany; Italy is hopelessly estranged from France; Spain is condemned to immobility by her internal circumstances and her geographical position. Spain is ruled—although this is one of the facts that are disguised from us by correspondents who are amenable to hospitality—by an unpopular, because a foreign, queen. The Spanish people are divided into Republicans and Indifferents, and the spirit of the country is upon the Republican side. France cannot find an

ally in Spain, but, on the other hand, Germany will not be able to make Spain march so long as France resists the temptations which lead her to Morocco.

Not only the most interesting to ourselves of questions which concern the friendships or the enmities of France, but the most important even from a French point of view, and the most difficult, is the question of her relations with England. So many are the points at which French and British interests come into contact in various parts of the world that conflicts between the two countries continually arise. Had the monarchy of July, or the Second Empire, taken as little trouble to avoid circumstances of irritation as has been taken of late years by the Third Republic, there would have been war between the two countries in the middle of the present century. That there has not been war in recent years has been due to the strong peace feeling in England, and to the inward consciousness on the part of French Ministers that there is, underlying a good deal of hostility towards England, also a real peace feeling in France. Sufficient causes of war have been continually arising, and they have not been dealt with in all cases with discretion. Take, for example, the New Hebrides. The conduct of the French Government in this matter has looked at times as though it were purposely intended to exasperate English feeling. In the Madagascar case the treatment of British subjects was of such a nature, that had the telegraph line to Tamatave been in existence, so that the facts had been published day by day in the English papers, war would probably have broken out. But the first of all questions in men's minds when they talk of the relations of England and France is that of Egypt.

I shall write on this question with all the moderation that I can command, because I know that if I say but half as much against the policy of France as has been said against it in leading French newspapers by leading Frenchmen, I shall be thought to be yielding to national prejudice, and not to be writing with the impartiality which ought to be shown by one who professes to write of facts alone. The French will bear from Frenchmen—like M. Weiss for example, "the first pen of France," as M. Gambetta called him when he made him despatch-writer to the Foreign Office—that which they will not bear from Englishmen. The editor of the *Times* cannot with impunity contrast the Germany of the day with the France of the day, somewhat to the disadvantage of the latter, or describe the German officer as walking among his men with the "demeanour of a God." Thus far does M. Weiss go in his last book, and even in his reassuring preface he cannot say more for his own country than that it is "not substantially inferior" to Germany. In this book, by the way, too, M. Weiss admits that

which has never before I think been admitted in writing by a leading man in France, that Prince Bismarck had been, whenever he wished it, the real Foreign Minister of the French Republic. If I were to say but one-tenth of what M. Weiss has said, I fear that if ever again I wished to visit Paris, and my identity were to become known, I might find myself conducted back again between two constables to Boulogne or Calais.

Let us try to appreciate the French position with regard to Egypt. Russia, France, and Turkey, are now pressing us to say how long we intend to stay there; and we reply as we have replied for years, that we do not intend to stay permanently, but that we do intend to stay until our work is done. It is useless for us, so far as affecting French opinion goes, to say that France backed out of her share in the protection of the Government of Egypt (after having, by suggesting the dual note, given that protection a militant character), and that she has refused to spend her blood and money in preserving order there. It is open to the French negotiators to reply that that was some years ago, and that they personally regret that their country did not take a more active part, but that the previous abstention cannot be allowed to affect the future as it affects the present. Now, England has by far the greatest interest in the Canal transit, and she has the same interest in the land transit through Egypt, because the land transit, which existed before the Canal, and which has been most important since 1830 or 1835, might replace Canal transit in time of a Chinese war or of an Indian insurrection, if the Canal were blocked, as by accident or pretended accident it might easily be. France, however, is attempting to raise an empire in the further East, she has military necessities arising out of her difficulties with Madagascar and with China, and she is not prepared to allow that the question of Egyptian transit is not also vitally interesting to herself. Looking to the splendid ports possessed by France upon the Mediterranean, and to the difficulty England would have in using the Mediterranean in a time of general war, it might even be argued that in certain eventualities Egypt might be of greater use to France than it ever could be to England. Still, free transit has always been the object which England in Egypt has had in view; and it will be remembered that in the famous conversation between the Emperor Nicholas and Sir Hamilton Seymour, the latter refused Egypt in the words that "English views upon Egypt do not go beyond the point of securing a safe and ready communication between British India and the mother country." In refusing a later offer of Egypt by Napoleon the Third, Lord Palmerston said, in words which ought to be remembered to his credit in these days of general spoliation, "How could we combine to become unprovoked aggressors, to imitate, in Africa, the partition of Poland by the conquest of

Morocco for France, of Tunis for Sardinia, and of Egypt for England? and how could England and France, who have guaranteed the integrity of the Turkish Empire, turn round and wrest Egypt from the Sultan? . . . . As to the balance of power to be maintained by giving us Egypt, in the first place, we don't want to have Egypt. . . . We want to trade with Egypt and to travel through Egypt, but we do not want the burden of governing Egypt, and its possession would not, as a political, military, and naval question, be considered in this country, as a set-off against the possession of Morocco by France."

It will be seen that Lord Palmerston did not set the value of Egypt to this country high. In 1878 Lord Salisbury declared that we did not desire to establish any territorial settlement in Egypt, and similar declarations have repeatedly been made since the destruction of the joint control. The interest of this country in Egypt is the interest of free communication both by the Suez Canal, and, as an alternative, by land across the isthmus, and the interest of British trade. As the means to the end, we think it desirable that Egypt should continue to be indirectly part of the Ottoman Empire, and essential that no other power should effect a settlement there. We think the honour of this country bound to the present Khedive, but France, which is also bound to him by a solemn declaration of her own suggestion, has, from time to time, proposed his deposition and the substitution for him of Prince Halim. Our interest in Egyptian finance is not a peculiar interest, and might be entirely provided for by general European stipulations.

Under the Goschen control, it will be remembered, England had the higher position, but France was largely represented; under Lord Salisbury's control, the English controller had still, at first, the chief place of authority, but there was a closer similarity between the functions of the two men, and under Lord Salisbury's control as modified in November, 1879, the distinction between the two controllers ceased, and they became of equal standing. At Christmas, 1881, England and France declared together to the present Khedive that they considered his maintenance on the throne as alone able to guarantee for the present and future the good order and general prosperity in Egypt, in which England and France were equally interested, and they stated in menacing terms that the two Governments were closely associated in their resolve to maintain the present ruler by their united efforts against all causes of complication, internal or external, which might menace him, and which would certainly find England and France united to oppose them. M. Gambetta, who had suggested this declaration, fell, and was succeeded by M. de Freycinet, who was opposed to armed intervention, and who, after

long opposition, agreed too late to a naval demonstration by England and France and armed intervention by the Porte, having first proposed the deposition of the present Khedive, which was refused by England. M. de Freycinet attached at first much importance to the employment of Turkish troops not being mentioned, and he finally backed out, or was disavowed by his colleagues, a proceeding which indeed caused the revolutionary movement in Egypt to come to a head. After this he agreed to a small Anglo-French demonstration, but the French Chamber refused the money.

That which followed is well known, and so is the fact that after the French occupation of Tunis the Sultan's alarm and indignation at the proceedings of France were such that he also followed the example of the Emperor Nicholas and of the Emperor Napoleon III., in offering Egypt to this country, only to be once more refused. The Sultan has, indeed, throughout been of two minds, sometimes inclining to the view that it would be best for him to frankly recognise the fact that he has lost all real hold over both the Egyptian and the Arabian populations and to compound for tribute, and sometimes inclining to the view that it would be possible for him, after the English troops had quitted Egypt, to reassert there some actual authority.

The intention, no doubt, of England when she went to Egypt to put down a military insurrection, was to leave that country as soon as possible. The difficulty of leaving was caused by Turkey's refusal to allow troops to be raised for the Khedive within the Turkish dominions, and by the difficulty of organizing an Egyptian army that could stand alone. The proposal for the absolute annexation of the country which was strongly pressed by some persons in the autumn of 1882, was steadily resisted by Mr. Gladstone, and the policy was laid down of gradually withdrawing the army of occupation to Alexandria, and of reducing it to under 3,000 men, which, although it has been delayed by events in the Soudan, continues to be the policy of the present Government. The decision not to accept Egypt for ourselves had virtually been taken long before this time. The annexation of Egypt, which would have been easily possible at any time between 1870 and 1875, or 1876, was set aside by the Conservative Government of 1874—80, in the successive steps by which they established the Anglo-French joint control, and recognised the high position of French interests, which they ultimately admitted to equal recognition with our own.

Another difficulty in the way of those who would indefinitely hold Egypt is the self-denying protocol of the Conference of the summer of 1882, while the strongest fact of all is that we have voluntarily but repeatedly informed the Powers that we intend to leave the country when our work is done. On the other hand, we cannot

forget the rejection by an enormous majority of the French Chambers of the Bill making provision for carrying out the agreement to which even M. de Freycinet had come with us for a limited French concurrence in the military steps to be taken against Arabi in Egypt. It is of course held in England that by abstention from taking her part in the restoration of order in that country, France forfeited her rights. At the end of 1882 the proposal to give France a certain share in the Egyptian government, although a comparatively small share, was rejected by France, which took up the position that after our intervention in Egypt the institutions which had been upset, revived, and amongst others the Anglo-French control. The French government were on strong ground in maintaining that obligations regularly entered into by three States could not properly be abolished or modified without the concurrence of all the contracting parties. The position of England was that the appointment of the controllers was the act of the Khedive, and that there was no engagement that the control should be perpetually maintained. The control was abolished under French protest, and has disappeared for the last four years. In the summer of 1884 it will be remembered France offered to renounce the idea of re-establishing the Dual Control, undertaking also not to substitute a French for the British occupation, nor to send French troops to Egypt without a previous understanding with England; in return for which England was to express her willingness that the withdrawal of British troops from Egypt should take place at the beginning of 1888, provided that the Powers should then be of opinion that such withdrawal could take place without risk to peace and order. These arrangements were to be subject to the success of financial proposals to be made by England to the Conference; but the Conference itself broke down. The financial views of the English and the French were laid upon the Conference table, and it would seem that subsequent experience has shown that the French were more nearly right than ourselves.

In connection with the Conference of 1884, the English Government announced its intention of proposing a scheme for the neutralisation of Egypt on the basis of the principles applied to Belgium. It is probable that if the English troops ever leave that country, a probability which we will presently discuss, Egypt will be declared an independent and perpetually neutral State, bound to observe neutrality towards all other States, and placed under the guarantee of the contracting parties; and the shadow of connection with Turkey and the payment of tribute to Turkey are not inconsistent with neutrality, as is shown by the case of the Lake district of Savoy, and other cases which might be adduced.

The present position of the question is, that when the French ask

us to name a date for leaving Egypt, we reply that it is impossible for a weak native government to rule the country so long as the low-class Europeans who inhabit Alexandria in great numbers, and in lesser degree the other towns, cannot be dealt with by the ordinary law; and as it is known that the French object to modify the Capitulations so long as we remain in Egypt, we in turn charge them with doing nothing to facilitate our leaving it, but on the contrary with making the difficulties which are the cause of our staying there. As long ago as 1857 this question of Europeans of bad character in Egypt had become an urgent one, and it is a curious fact, though only an historical curiosity, that the opposition to proper police control over low-class Europeans in Egypt came originally from England. It is to be feared that a subject very important in itself is being used now upon both sides deceptively.

As to the duration of the English occupation, there is this thing to be said, that, so long as the French violently denounce the occupation, it is likely to continue. Some of the more moderate and more reasonable of the French newspapers have themselves pointed out that England went to Egypt with the consent of Europe to re-establish order; that she went alone and at some risk and with much cost, and, indeed, they might add that we asked first France and then Italy to go with us, and went alone only after our invitation had been refused by both; refused, in the case of the former, by the Chamber after acceptance by the Government. These moderate journals argue that the English must judge for themselves whether it is yet safe for them to leave the country which they undoubtedly mean some day to leave; that it would be a folly for France to court refusal by asking questions too definite in form, and a still greater folly to fight for such a cause. These journals have pointed out the extraordinary reversal of French policy which is involved in the proposal to use the Turks to morally drive England out of Egypt, France having always been throughout her history the most reluctant of all the Powers to admit the existence of Turkish sovereignty in Egypt. Is France willing, they ask, to restore the supremacy of the Sultan in Tunis or Algeria?

It is indeed true that the French agitation against the English occupation of Egypt, which reached its height in November last, may well be pleasing to Russia, and has awakened illusions for the future, as well as cynical thoughts about the past, in the Sultan's mind. The class of feelings which it has aroused in Turkey finds expression in harmless notes to the British Government, which I take it are hardly read, although they are occasionally replied to. The feeling aroused in Russia by the action of France may possibly bode more danger to European peace, because, although there is no alliance between Russia and France, yet if France backs

all the proceedings of Russia in Bulgaria, Russia in return will find herself forced to back all the proceedings of France with regard to Egypt, and the result may be some wound to British pride which conceivably may lead to war. Except as regards Russia and Turkey, France of course only increases her isolation by her Egyptian policy. Italy is forced if possible farther away from France, whilst Austria and Germany remain indifferent, or think only of themselves. It would almost seem as though no real calculation of interest presided over the policy of the French Foreign Office. Provided that France can show herself able to make a sufficient noise in the world, it would seem as though French politicians were indifferent to the driving of Italy and England into the arms of Germany and Austria while they secure only the approval of Turkey and the Platonic alliance of Russia. Clearly French politicians do not adopt that elementary maxim of diplomacy which rivals in simplicity the "Never prophesy unless you know" of daily life; namely, "Never make a fuss unless you see your way ahead." Obviously, France, in telling England to leave Egypt, only postpones the date of the evacuation. Lord Randolph Churchill, whose power, so long as he terrifies the Tories by sheer energy, and paralyses the Liberal party by receiving Mr. Chamberlain's support, it is difficult to over-estimate, does not, unless he has strangely and suddenly changed his views, believe in the expediency of a British occupation of Egypt, not to speak of its necessity. But Lord Randolph Churchill is an Opportunist even more distinctly than a peace-loving Democrat, and he knows that John Bull will not leave Egypt as long as France bids him do so, so that he will probably not oppose Lord Salisbury's policy. The net result of French action is simply to court refusal, to drive England into an alliance with Germany, Austria, and Italy, and to make the continuance of the occupation certain.

The real value of a position in Egypt, whilst it is admittedly important as regards an Indian rising or a war with China, is easily exaggerated. In a great war in which France was against us, or in which Italy (though, in the present circumstances of Italian friendship, this may be neglected) was one of a coalition of hostile powers, the Suez Canal would be useless. It is practically impossible to run past France and Corsica on the one side and Algeria and Tunis on the other, and to command the Mediterranean sufficiently to convoy troops, supplies and goods, while keeping our command in the Channel and patrolling the seas of the whole world. We cannot, in short, safely carry troops through the Mediterranean against either Italy in a combination or France alone, and this whether Russia be or be not at Constantinople, and be or be not at war with us. In a war in which France was against us, it may safely be asserted that France could not communicate with her Eastern

possessions at all, and we with ours only by way of the Cape, and that the Suez Canal, as regards belligerents, would virtually be closed. But nations do not fight for points which are vital and let go all points which are not. Nations generally fight for sentiment; and it is certain that in the present frame of the British mind and state of the British temper we shall not go out of Egypt as long as France orders us to go. The raising of the Egyptian question has confirmed the prospects of peace, by placing on the one side four Powers and on the other two units, and the only doubt of this concerns the effect that has been produced in the mind of the Russian Emperor by the use of hostile language between England and France. In the next article of this series I may have to consider whether an arrangement between England and Russia is or is not possible, and whether Europe might not arrive at a lasting peace based on the isolation of France. Since the raising of the Egyptian question by France, Germany has ceased to find it necessary to proclaim a constant willingness to help French interests in all parts of the world. The change was not coincident with the return of the Conservatives to power in Great Britain. If it had been, we should have been inclined to ascribe it to the dislike felt by Prince Bismarck for some English Liberal politicians. But while three years ago Prince Bismarck by no means completely endorsed our Egyptian policy, and occasionally joined with France to slight us, as he also did at one time as regards the Congo; and although he backed up French aggression in the case of the New Hebrides, yet the change which took place on his coming to an agreement with us about Zanzibar—an agreement distasteful to France and made without consulting her in advance—was rather coincident with the revival of strong feeling between England and France about the Egyptian question than with the change of government. Even after the present Government had been in power we seemed to be floundering between the hostility of France and the hostility of Germany. France was flouting us about the New Hebrides and Germany was openly ridiculing us through her official press. It pleased Mr. Ashmead Bartlett to ascribe the isolation of England as well as her feebleness to Mr. Gladstone, but it must be admitted by any fair observer that its causes lay deeper than party. We seemed unable to mollify either France or Germany, and yet still to want the one or the other as our friend, and to be without a friend in the whole world. It looked as though Italy were our only friend when Mr. Gladstone was in power, but as though we had none at all when he was succeeded by Lord Salisbury. Suddenly all this was changed, and we became firm friends not only once again with Italy but also with Austria, and through Austria with Germany. This change may partly have been aided by wise policy on Lord Salisbury's part, but the most important factor in producing it was

aggression on the part of Russia and aggressive language on the part of France—the action of Russia in Bulgaria, and the language of France upon the question with which we are here concerned.

If England had been inclined to let the Egyptian debt take care of itself; to insist during the occupation on defying the capitulations, as French generals would have defied them; to take her own course, which she firmly believes to be the wise and scientific course, as to quarantine; to insist on simple justice as regards the taxation of foreigners, France would have grumbled, but probably not fought, and Egypt would have been the better for the action of England and none the worse for the grumbling of France. England did none of these things. Throughout the occupation she has been courteous and, internationally speaking, law-abiding to the verge of weakness. On only one occasion has she allowed of the faintest infraction of international agreement, and then under the pressure of overwhelming necessity, and with her action immediately succeeded by an apology and explanation, and condoned by the general opinion of Europe. The French, instead of quietly holding the English Liberal party to its declarations, and, through it, the country, have noisily stepped in and greatly increased the difficulties in the way of withdrawal. The Conservative party in England would, have left to the Liberals the unpopularity, whenever they should next come in, of actually quitting Egypt, and so risking a fresh rising, or the trouble of carrying out the arrangements for neutralisation. Now, however, under the rumour of French menace, the neutralisation scheme of the Liberals, with any personal leaning towards it of Lord Randolph Churchill, has for the present vanished, and both parties (*pace* Mr. Labouchere) are for the illogical but safe *status quo*. "Il n'y a que le provisoire qui dure," and it looks as though a temporary occupation had been given a longer life by the recent language of France and Turkey, and by the demonstration of the existence of a Franco-Russian understanding at Constantinople. Powers and parties are human, and self-interest itself is often a less strong human motive than the desire to annoy one's neighbours. Bentham somewhere proves that there is such a thing as disinterested malevolence, and I fear that if it exists at all it is occasionally to be discovered in nations, at all events as highly developed as in the proverbial dog in the manger. There are in England a great number of persons who are persuaded that the military occupation of Egypt is a source of strength to England. But a large majority of these, who are themselves not a majority of the electorate, are persuaded that we are bound by promises voluntarily made to Europe that the occupation is to be temporary, and for practical purposes these count on the side of the persons who are against the occupation. France herself has greatly

increased the number of those who will strain a point to avoid giving immediate effect to our promises, and must have increased the number of those who persuade themselves that the remaining in Egypt is a British interest. If France would help us in Egypt, if she would strengthen the hands of such men as was M. Barrère, as is M. d'Aunay, in resisting the selfish action of individual Frenchmen at Cairo, when they behave in a manner really hostile to the higher interests of the French nation; if the French Government would give up the capitulations and replace them by a proper system of police and a just criminal law; if we were aided and not thwarted—evacuation or neutralisation at an early date might indeed become possible. So different has been French action, that many, seeing M. Barrère unable to cope with the *Bosphore Egyptien*, and M. d'Aunay in late times forced to support his compatriots, jump very wrongly to the conclusion that M. Barrère, and later M. d'Aunay—that in fact the French Consul-General as such—must be the centre and soul of French resistance to the occupation. Both M. Barrère and M. d'Aunay are very able men, neither of them perhaps too much burdened with pedantic principle; both speak and write English perfectly, and have lived long in England, which is a help towards understanding English ways and modes of thought. M. Barrère indeed is a man who found himself equally at home on the barricades supporting the Commune at the age of twenty and, at the age of thirty, on the European Commission of the Danube, patronising aristocratic Austria herself, a man to whom English is so familiar that a drawing-room at Albert Gate, when he already held the rank of minister, once presented the singular spectacle of a French ambassador and a French minister discussing between themselves in the English tongue, into which they had unconsciously dropped, in the course of their conversation, the problem how their country might best get the English out of Egypt. M. d'Aunay inherits from his direct ancestor Lepelletier a habit of courteous give and take, and speaks and writes English, if not with the British vigour of M. Waddington and M. Barrère, at least with great skill. These men understand how to get the English out of Egypt and how to keep them there, and if they have had to keep them there, it is because persons in France, incompetent to judge of policy, have imposed on them, as well as on their masters in France, a line of action of which they see the folly. Some of the Foreign ministers of France of recent years have been of the calibre of chairmen of the Metropolitan Board, but M. de Freycinet was a cautious statesman of European fame, and whatever faults he may have had, knew perfectly—as well as M. Barrère, whom he detested, or as M. d'Aunay, whom he trusted—how mistaken was the policy he was driven to pursue.

The Opportunist politicians, or successors of Gambetta, composed the party which was most active in the anti-English outcry. Just as, the moment after their leader died, they advocated alliance with that Russia which he abhorred and against which he looked to Germany to protect the world; so, while Gambetta followed the earlier statesmen of France in detesting the presence of the Turk in Africa, and was a representative of the Frenchmen who backed Mehemet Ali, his party, immediately after he was gone, began to prompt the Turk to express to England his desire to return to Cairo. The change in the Egyptian policy of France, when she began to back up the Sultan's supremacy, is perhaps more extraordinary in suddenness and completeness than any modern national change of front except England's, when Lord Beaconsfield offered Herat to Persia in 1879. It is assumed by the English press that the word was passed by the French Government to the French press to attack England about Egypt. The *Temps*, however, which is the organ of the Foreign Office, was very moderate in its language. The most violent papers are not under Government influence. This violence, as I have shown, was calculated to do harm to the interests of France, as M. de Freycinet, who is a wise man, must have been well aware. I believe, therefore, that, so far from being desired, it was inconvenient to the Government of France. The French Government lagged behind public opinion in place of leading it, and the Government position, as expressed to England, was as follows: that France, which made the Canal, and has a large amount of money invested in it, and which is also historically and sentimentally interested in Egypt, does not desire to press England to leave Egypt at once, but merely reminds her of her promise to leave it, and asks, not for a fixed date, but for some sort of approximation to a date at which the English troops will leave. France is willing to engage that French troops shall not go to Egypt, and desires to enter into an engagement to secure the absolute neutrality of the country, or to carry out, what England has all along professed to be her view, the restoration of the "*status quo ante Arabi*," but with some security taken against the Arabis of the future. The moderation of the French demands is, however, the result of failure to bring pressure to bear upon England, except, indeed, at Constantinople, and it is possible that, if French views had received more support, the language officially employed would have been more emphatic.

In the meantime France does not help us to withdraw. She protects seditious newspapers published by French subjects; she insists upon maintaining to the letter the Capitulations, by which the administration of Egypt, not only by England, but after England is gone, should England incline to go, is rendered dangerous in the extreme. At the bottom of the unwise and somewhat illogical action of France there

lies, as there almost always lies at the bottom of unwise acts on the part either of nations or of individuals, a fit of temper. France knows that, if England was to go to Egypt at all, France should have accompanied her. France agreed to go, but the Chamber rejected the agreement. It was M. de Lesseps who really prevented France from doing that which she had promised to do, and, after the collapse of Arabi, leading French politicians blamed M. de Lesseps for misleading them as to Arabi's power. And so the French, profoundly dissatisfied with the inevitable consequences of their own inaction, have striven to avenge their mistake by thwarting the English in Egypt; and every check to the French army, whether in Madagascar or Tonquin, has but intensified their malevolence. Mutual sulkiness on the part of France and England in regard to Egypt is likely to continue. France does not mean to fight for Egypt, and yet is not satisfied to have been ousted from it. And England will stay there, although nearly all Liberals and many Conservatives desire the neutralisation of the country, just because England will not leave Egypt under pressure, and there will continue to be pressure enough exerted by France to make it impossible for England to leave. The troops will be brought from Cairo to Alexandria, and be reduced to under three thousand men, but complete evacuation will not take place.

In the writings of French newspapers upon Egypt there is a great deal of exaggeration. The popular belief in France, which is not shared by the men who control her destinies, is that England is an annexing Power, anxious to lay hands upon all possible portions of the world, and checked only here and there by France and Germany. As a matter of fact, for many years past, with the exception of the movement upon Burmah, which was caused by the action of the French agent there, England has made no annexations except in self-defence against the annexation policy of Germany or France, and has declined to annex the Cameroons, Zanzibar, and Egypt itself, not to speak of other countries, over and over again.

I have assumed that France, however much she grumbles, does not intend to fight for Egypt. If France meant business and were determined to brave all consequences, if she intended even to risk war for Egypt without actually provoking it, she would take one step which is always in the minds of French politicians. She would take England out of the most favourable and place her in the most unfavourable column of the French tariff, at the same time allowing free entry into France for certain classes of yarns which are absolutely needed in the French cotton-spinning industry. Everything else that France absolutely needs and that she at present gets from us, she could, it is argued, get from Germany and Belgium, and a very slight rise in the price of certain goods would only be an inconvenience of the same nature as the inconvenience which she bears

already in the form of duties for the sake of protection. Another step that France would take would be to raise some pretext in Egypt for interference, and French troops would be landed, nominally as against Egypt, at some point on the Egyptian coast, with a declaration of perfect friendliness towards England, but with the intention that they should remain there as long as our troops remained. The friendship of Italy and our joint naval power prevent all chance of a sudden attack by France on Egypt, and make it impossible for France to hope to hold Egypt in the event of war. It is true, however, that we ourselves in that case would derive little or no benefit from its possession. But no strength of our own and no strength on the part of Italy could prevent a landing of French troops in Egypt on pretence of some violation of the Capitulations against a French subject, and it is not very easy to see how a termination could be put to a virtual joint occupation except by that neutralisation which France herself demands; a neutralisation, the name of which scares people here, though in my opinion, if properly secured, it would offer nothing but advantages to this country.

There is another view of the action of France with respect to Egypt, which is, that when M. de Freycinet talked of Egypt it was the Canal that he really had in view, and that, knowing as he did that he would not be able by pressure to get his way in regard to Egypt, he must have meant only to get it with regard to the Canal. The most authoritative statement of the French views upon the subject is M. de Freycinet's own, when he said that England and Italy had put forth one view and that France had put forth another, but that the other Powers insisted that England and France should agree, and that he hoped that it would not be long before that agreement was reached. The only difficulty in settling the question of the Canal is caused by the fact that the Conservative Cabinet somewhat hesitates to settle it for fear of Parliamentary attack. Everybody seems to mean the same thing with regard to the Canal. There is no real difference of opinion upon the subject itself, but only a divergence of language between the proposals which England and France have made respectively. Proposals to secure by international agreement the freedom of the Suez Canal, both in peace and in war, at all times for all ships, whether of trade or war, have been made by England at least twice. Now France can come to an agreement with England upon this subject whenever she pleases, and if she uses language of insistence it is only for the purpose of breaking through a door which is already open, so as to be able to celebrate a triumph. The other Powers, with the exception of Russia, which will do what is most agreeable to France, in order to keep up the shadow of an alliance, think the English Canal proposals sufficient and satisfactory, and the

only difficulty has been a difficulty about words, and the only reason why there has been no agreement has been because there was no real desire for agreement, inasmuch as each Government is afraid of its Parliament. The statement which has been repeatedly telegraphed to various journals that England declined to entertain French proposals for a neutralisation of the Canal which would prevent the passage of the English fleets in time of war, is a mere confusion, for France has never made and never intends to make any such proposition. The Powers agree that the Canal should be made free on all sides, and should be protected against blockade, but none of them desire to limit its use by ships of war. The disputes about words have been formidable, no doubt, and have been intensified by the peculiarity of the problem, for there is no diplomatic question in the world similar to that of the Suez Canal. According to a witty remark ascribed to Baron Solvyns, the Belgian minister at this court, a diplomatic career consists in passing one's life in explaining to others things which you do not understand yourself, and there has been a good deal of that kind of diplomacy employed upon the questions relating to the Suez Canal.

It is rather a startling statement, but one which is perfectly true, that the Canal has been neutralised from the first, and is neutral at this moment. Its neutrality is read into the original firman by a reference to the Act of Concession. The action taken by France during the Franco-German war constituted an admission of this neutrality, and was consistent with something more than that which we have always meant by it, namely, equal freedom for the use of the Canal by all powers. In the Russo-Turkish war, Russia engaged not to bring the Canal within the sphere of operations. M. de Lesseps at one time made a proposal for the neutralisation of the Canal in terms which were approved by the French Government, but to which the English Government saw objections which they did not explain. After Arabi's insurrection, further plans for dealing with the Canal were discussed between the Governments, but an ambiguity arose from the use of the word neutralisation in two different senses. England at one time rejected a suggestion of neutrality,understanding that neutrality meant the closing of the Canal against all vessels of war at all times, which was never, as a matter of fact, intended by France; but England proposed as her own, in a subsequent communication, a measure precisely similar to that which had been proposed by France in 1877. The English proposal is that whilst all ships at all times should be allowed to pass through, there should, in times of war, be a limit of time as to ships of war of belligerents remaining in or about the Canal; that no hostilities should take place in the approaches to the Canal; that no fortifications should be erected on or near it; and that the Canal and its neighbourhood should not be

made the base of military operations. I repeat that there is no real difference of opinion between England and France, and that an arrangement could be concluded now by a public statement on the part of England that she is willing to accept the very words of the proposal made by M. de Lesseps.

There are a good many differences between England and France besides those which concern Egypt and the Suez Canal. In the New Hebrides there was a violation of an engagement with us, as well as that complete disregard of native rights which has now become universal on the part of European Powers. In Madagascar, where the Government of England have decided not to interfere, there is carried on in the name of France a violation of every principle which keeps civilised mankind together, an outrage which rouses the indignation of English High Churchmen, Congregationalists, and Quakers, who are all strongly represented in the Madagascar missions, and attracts to their views upon the subject the sympathy of members of other religious denominations. Moreover the formation of a French military establishment at Diego Suarez or British Sound, is regarded by English naval men as directed against this country. On the Upper Niger the French are coming into conflict with the interests of the British traders established on that river, as they are also upon the Congo. The French are annexing other islands in the Pacific besides the New Hebrides group, and are threatening to use them for convict stations, to the intense dissatisfaction of our Australian colonists. In some of these cases the annexation is of islands the independence of which France has engaged herself to this country to respect, as for example, Raiatea. In regard to the Ecréhous group, near Jersey, the French keep open a dispute of a dangerous kind. On the other hand, in China as in Egypt, and as in Madagascar indeed, but that Madagascar is an evident case of wolf and lamb, the French consider that they have grievances against us. In the case of the Newfoundland fisheries and French Shore questions, each country finds grave fault with the other.

It is necessary for us to examine these questions at some little length, because out of almost any one of them war might easily arise. The French nation is not united upon these questions. The most powerful newspapers in France by no means adopt the "Colonial policy." M. Clémenceau, one of the strongest of French politicians, condemns it, as it is condemned also from the other side by the Monarchical Opposition, and by Independent financial reformers. With a deficit in every Budget for the last four years, which has risen from two millions sterling, five years ago, to ten millions sterling last year, and about ten millions this, France cannot afford to pour out gold upon Tonquin, and Madagascar, and Senegal, and other pestilential places, which will never bring in a tithe of what

they have cost. The "Colonial policy" greatly weakens the military position of France in Europe, and disorganizes her finances, while it compromises the efficiency of the only thing which really counts in modern Europe, the rapidity of the mobilization of the reserves. The "Colonial policy" has obviously increased the work to be performed by the French Army and Navy in time of war, and has given hostages to England, who would be able to cut the communication between France and all these so-called Colonies, if the two countries were at war. France has acted in Tunis in a way that has irritated Italy; she has incurred the lasting resentment of the Australian colonies of Great Britain, which one day will form the third power in the world, and she has permanently alienated that which will probably be one of the strongest military empires—China. The Tonquin policy of France has increased the chance of China joining England whenever France joins Russia, and a Chinese alliance in the Pacific is certainly not to be despised.

The French Colonial policy has always been a very costly one. French subjects in the French dominions outside of Algeria and France cost France about £1 per head per year. British subjects in the British dominions outside of the United Kingdom cost us about 2d. per head per year, excluding indirect naval expenditure upon both sides. The French Colonial policy from the time of Colbert to the present day has been closely connected with the French doctrines of protection, and the dominant idea in connection with the extension of French dominion is to place differential duties upon foreign goods. In some cases, but not in all, a religious persecution on a small scale also plays its part, and the French flag, which does not protect Catholic interests at home, gives them something more than an equal chance abroad. I suppose it is useless to speak of the rights of the native inhabitants of the countries which are annexed by France. Looking to our own past, it does not lie in the mouth of an Englishman to do so. But we may hope that when the historian of the future comes to deal with the times in which we live he will point out that England in this respect grew better whilst France grew worse. It is necessary to bear in mind, in considering the subject, that the French colonies are all of what we should call the Crown colony type, and that none of them resemble Canada or Australia or the Cape in getting their own way. Where the supposed commercial interests of France come into conflict with the interests of the colonists, as seen by the colonists themselves, colonial interests have to give way, and where the colonists desire to buy in the cheapest market, the French have frequently insisted upon their being made to buy, by means of differential duties, the dearer goods of France.

The present difficulties between France and China, in which the French suppose, rightly or wrongly, that the Chinese have us behind them, have grown gradually out of the difficulty which arose during the Tonquin war. English sympathies will naturally go with China in her desire herself to undertake, in concert with the Holy See, the protection of Catholic interests. We know how in the past these real interests have been jeopardised by their connection with the political interests of France. We know that on the whole the London Missionary Society has succeeded perfectly of recent years in dealing directly and peacefully with the Chinese; and we desire to see the causes of future quarrel lessened, as they would be if Catholic interests in China received the peaceful protection of the Vatican rather than the gunboat protection of the French Republic. In the long run, China, upon this subject, is certain to get her way. China is now too strong for France to take Pekin without a fight which would greatly reduce her continental fighting power. But France could, single-handed, still take Pekin, because the Chinese will not yet make intelligent modern use of their splendid men, and their officers are still silly beyond description. War between France and China, if a real war, and not the ambiguous state of things which prevailed on a recent occasion, would be so serious for us, with eighty per cent. of the China trade in our hands, as against the three per cent. which France possesses, that it may be considered that an effective blockade of the Chinese coast could not be enforced by France without the certainty of such irritation arising on our side that we ourselves should be drawn into the vortex. As the French have something to say for themselves upon the Egyptian question, so, too, with regard to the Chinese. It is true that our influence at Pekin is great, and that it is not of a description very friendly to the French. If our influence there is menaced, it is not by French influence that it is menaced, and it is not a Frenchman who is likely to obtain the key of the position by becoming the future Tsung Shui Wu Sze, or Inspector-General of Imperial Maritime Customs.

As regards the French position in non-Algerian Africa, it is well known that vast sums of money have been spent in Senegal in the attempt to lay out a railroad towards the Upper Niger, and much also has been expended in trying to found an empire upon the Congo, efforts which Germany has done all in her power to promote, because she agrees with English observers as to the weakening effect upon the French power in Europe of her new colonial policy. In the case of the Niger, French and British interests at one time came sharply into conflict, but the West African Conference held at Berlin in 1884 laid down the respective spheres of influence and established the principle of commercial freedom for the Niger, so that difficulties are at an end for the present. At the same time if

the French choose to go on spending sufficient money, they will ultimately, although at vast cost, reach Timbuctoo both from the side of Senegal and also from that of Algeria. The French expenditure in the district is, however, probably connected in some degree with hidden designs against the empire of Morocco, which form a source of possible European complications for the future, inasmuch as Spanish pride would be greatly wounded by the conquest of Morocco by the French, whilst England possesses in Morocco a considerable trade. As regards the Congo, I know that I attempt to swim against the stream of English opinion in regard to the help given by this country to the exclusion of Portugal from what I believe to have been her ancient possessions upon the Congo coast, and I also differ from many in England in thinking that the International Association, which has now become the personal Congo kingdom of the King of the Belgians, has by no means shown by its past that it was any more worthy than Portugal, which was not thought worthy, to receive the control of the vast districts in the interior. While by the policy of the West African conference and by the assistance given by Prince Bismarck both to France and to the King of the Belgians in 1884, France has been admitted to the Congo on one bank, an enormous district in the heart of Africa has been made over to the King of the Belgians, with, however, the happy condition of freedom of trade. Engagements between two Powers with respect to African annexation, or, indeed, with regard to any of the countries of the world which are what is styled "unoccupied," that is, occupied by the black people to whom they properly belong, are apt to be of very little use. For example, in 1862 there was an agreement with France that neither England nor France would interfere with the independence of Zanzibar, but Germany has now taken away the greater portion of the Sultan's nominal territory there. And there is always this risk of a third power stepping in. On the other hand, whatever the French may think, English interests in Africa are secured when freedom of trade has been secured, and the extension of the principle laid down in the conference at Berlin in 1884 would suit England better than increase of territorial responsibilities. These considerations leave out of view, as I am pledged to leave out of view throughout these articles, questions of right or wrong; but while England has not in these matters always acted upon the principles which a large portion at all events of her public men have professed, in the case of other countries there has never been much desire to take questions of ethics into consideration in dealing with weaker peoples. In the days of the Holy Alliance, when Christianity was nominally laid down as the guiding principle of the great Continental Powers, it was nevertheless England which had invariably to take the first step in all matters which concerned

the suppression of slavery and of the slave-trade, and her suggestions were viewed frequently with as little private favour, whatever may have been the public language held, as is extended now by Prince Bismarck to English views upon the subject of Turkish reform. Just as England led the way with regard to the slave-trade, and was followed by the rest of Europe for very shame, let us hope that now that her own desire for annexation has passed away, she will gradually be able to induce the Continental Powers to show some small regard for the independence of the dark-skinned races. The real interest of Europe as such is the same as the interest of civilisation, that these countries should be open to healthy trade, not a trade confined to arms and liquor. But to the Protectionist Powers open trade has hitherto meant British trade, and it is a remarkable fact that Germany should have had the prudent courage in 1884 to make a new departure in proclaiming herself the champion in such countries of free trade. France, however, in her annexations has always in view the exclusion of British and German trade by means of differential duties, and this fact heightens the regret with which her aggressions in Madagascar and other places are viewed by the English people. So long as the dark-skinned races are treated as they now are, it must be sorrowfully admitted that in the foreign affairs of the Powers, as too often in the business affairs of individuals, that common Christianity disappears which is practised in some, at least, of the daily affairs of life by most men in the United Kingdom and the United States and Russia, and in a less degree in Germany and the Austrian Empire. No one asks what is right, what is just towards natives, but only looks to what is selfishly best from the narrowest and most grasping point of view.

Of Madagascar I need hardly speak, the circumstances are so well known in England, and there is the less necessity to dwell on them, because it seems improbable that France will for the present make a serious attempt to carry into effect the designs which all the writers upon her colonies openly proclaim. There is, however, the fact to be borne in mind that the English Government have evidently decided not to resent a French occupation of Madagascar, or even the creation of a Gibraltar at British Sound. But, in the case of some of the French annexations in the Pacific, there is a direct interference not only with the interests but with the treaties of Great Britain, and also with the interests of the Australian colonists. Of such annexations it is necessary to say a word.

The Australian colonists have for years protested against the transportation of French convicts to the penal settlement in New Caledonia. The first great quarrel between Australia and France was caused by a custom of the Governor of New Caledonia, who used to grant free passages to time-expired convicts intending to proceed

to the British Australian colonies, a custom which somewhat reminds one of a former practice of the Channel Islands, when they transported their convicts to Southampton. The Australian colonies have followed the lead set by Victoria, a free colony from the first, in resenting bitterly the effects of the transportation system. Victoria it was that stopped the transportation of English convicts, first to Tasmania, afterwards to West Australia, and thus, at last, altogether. In 1882 there were frequent debates in France upon the subject of the transportation of habitual criminals, which had been strongly recommended by M. Gambetta, and the rumour spread that it was to the New Hebrides they were to be sent. Now in 1878 an agreement had been made between England and France which formed a distinct pledge on the part of these two Powers not to annex these islands, and this agreement has latterly been renewed. Yet in spite of it the French flag has been hoisted in the New Hebrides, and France appears in the most distinct manner to have broken her twice-pledged word.

The view of the Australian colonists is that the French intend to do to them what in 1872 we prevented the French from doing to ourselves. After the suppression of the Commune the French Government began to make England a penal settlement by expelling people from France whom Germany and Belgium and Switzerland and Italy would not receive, and who, destitute and without papers, were sent away from Calais and Dieppe to be landed in English ports and to become chargeable upon the English poor rates. The Australians believe that France intends to ship large numbers of habitual criminals to islands in the neighbourhood of Australia, and then, by keeping a very lax guard upon them, to allow them to escape and so to avoid the cost of their detention. To suppose that this is likely to be done upon a large scale as part of a system is, no doubt, an exaggeration, but it is certainly the belief in Australia, where panic upon this subject has of late years been frequent. In 1852, an Act was passed in Victoria to protect that colony against even pardoned or time-expired convicts, and although it was disallowed, the Governor was afraid to make known the fact of its disallowance. A temporary Act was afterwards passed, to which another Governor assented, on the ground that, if he had not done so, the colonists would have taken the law into their own hands. Ultimately, the Home Government gave in, and the colonists were allowed to pass Acts upon this subject, which were contrary to every principle of English law, and the Stockade near Melbourne was filled with persons who were, no doubt, many of them, undesirable colonists, but who, according to British principles, were properly free men. When the French first occupied New Caledonia, the Government of New South Wales informed the mother country that they feared the

occupation by a foreign Power of these islands would, at no distant date, be a source of much trouble and anxiety, both to the Australian colonies, and to the British Government. This prediction has proved too true, and it is likely perhaps to be even more completely justified in the future. The strength of Australian feeling upon the subject of transportation has never been kept within the limits of law, and for this country to insist upon its strict rights towards Australia in the matter, and still more, for it to maintain the strict rights of France, or of any other foreign Power, against the outburst of Australian feeling, would be simply to produce separation, if not separation coupled with war. To take a somewhat similar case, when the Irishmen who had given evidence against criminals in their own country, and had to be protected by the Government, were shipped quietly to Victoria, the Victorian Government refused to allow them to land there, although they could not even pretend that they were legally justified in their refusal.

It is in the light of what has happened in the case of New Caledonia that we are compelled to regard French action in the New Hebrides. In the case of the New Hebrides the Australian objectors will have their hands strengthened by the fact that the French occupation of New Caledonia was legitimate according to the accepted view, whereas the occupation of the New Hebrides was, had our Government chosen to resent it, a *casus belli*. The French are behaving in regard to the New Hebrides now as they have behaved, since 1879, in regard to the Society Islands, and our Government have met their action with a protest, but with a protest only, for which the French do not seem very much to care.

The New Hebrides were discovered by Captain Cook. They were partially civilised by English and Scotch missionaries. In 1857 the chiefs of the largest island requested the protection of this country. In 1858 the expediency of the protection was recommended by the officer commanding the naval forces upon the station. In 1858 and 1860 the chiefs again offered the cession of their island, which was formally declined. In 1865 the colony of New South Wales began to interest itself in a movement for excluding from the New Hebrides any other European power, without annexing the group ourselves. In 1876 it was pointed out that there was a large Presbyterian mission in the group, and that there were sixty Englishmen, three Swedes, and only one Frenchman residing in the islands. In 1876 the French Government informed us positively "that there did not exist, and never had existed, any intention, on the part of France, to take possession of the New Hebrides." In 1878 the French Government spontaneously proposed a declaration of the intention not to annex the group, and a French statement was replied to by a similar statement on the part of England. In 1878 the New

Zealand Government set up a claim that the islands were actually theirs, and also remonstrated against the joint declaration, but were promptly replied to by the Government at home. The New Zealand Government still, however, held that the New Hebrides were theirs by the charter of 1840, and that the Home Government had acted without consideration in 1878 in agreeing to the joint engagement. In 1879 the French declaration was renewed; as it was again in 1883. The breach by France is not, as in the case of Raiatea, the breach of a somewhat old agreement (the date in that case is 1847), but the breach of a brand new engagement proposed by France herself in 1878, and renewed in 1879 and 1883.

The case of the New Hebrides is almost as interesting to the English religious world as is that of Madagascar, in which, however, there is no breach of treaty. English missionaries have for thirty-eight years been working in the New Hebrides, and a very large proportion of the natives have now become civilised and Christian. There can be no doubt, from the concurrent testimony even of travellers who are favourable to the French, that the population are as opposed to the idea of French annexation as are even the population of Madagascar. There are large holdings of land in the New Hebrides by British subjects. There is a great amount of British money expended in churches, schools, and mission stations. There are over a hundred British subjects in the group, and fewer French, except the troops who have lately been sent there to form three military posts. It is a serious matter to quarrel with France about anything, and certainly about an island which we do not want ourselves, and which we have over and over again refused, but it is a still more serious thing to allow a solemn declaration volunteered to this country, and accepted by her, to be contemptuously set aside; and if the Government condone this action on the part of the French, it must be because an occupation of Egypt weights us with a heavy burden in our dealings with France in other portions of the world. Clearly it is useless for us to enter into engagements with other Powers in the future, if we allow engagements thus to be set at naught; and there are circumstances in the case of the New Hebrides which make the aggression such as even the greatest of lovers of peace may properly resent.

The case of the Ecréhous rocks, near Jersey, is a curious one. They have always been looked upon as belonging to Jersey, and have been occupied every summer, from time immemorial, by Jersey fishermen and Jersey seaweed-gatherers, have never been claimed by France in the past, whilst they are actually included in a Jersey parish and have a few permanent inhabitants who are Jersey men. Crime in Ecréhous has been punished in the Jersey courts, and no attempt was ever made until quite lately to raise any question about the

matter. In this case no act of aggression has been committed by France, and no false claim has been asserted by the Government of France, as such, but the violence of the French Press in its declarations that the Ecréhous have been lately seized by England is founded upon a complete misapprehension of the facts. This question is closely connected with that of the fisheries upon the coasts of the United Kingdom, into the intricacies of which I will not enter here, for it, like the Newfoundland question, would claim an entire and not very interesting article to itself; but I will merely mention them among the causes of dispute between this country and France which may become serious at any moment.

Some French Chauvinists have lately been setting up pretensions more extravagant than even those which have led to the French action in the New Hebrides which I have described. Just as in the case of Italy there is an Italia Irredenta, of which the boundaries are continually stretching out, so in the case of France there is now a Francia Irredenta, a Gallia Irredenta, or what shall we style it? French Canada has not yet been asked for, but the Newfoundland grievance is kept alive, and the "French shore" will continue to be claimed until there comes a day when a proposal will be made to us for the exchange of St. Pierre, Miquelon, and the "French shore" for the Mauritius. There is no doubt that those Frenchmen who pushed on the Madagascar expedition expect that one day the Mauritius will fall under French rule, and believe that the French-speaking inhabitants of the Mauritius ardently desire the coming of that day; in which belief, according to the information at my disposal, they are entirely wrong.

It is wonderful, looking to the number of the causes of difference between England and France, that the two countries should manage, as the phrase has it, "to get along" at all. That they have done so during the years in which French Chauvinist feeling has, in order to forget Germany, been turned against England, is largely due to the tact and caution of Lord Lyons. May I be allowed, without the ascription of any but patriotic motives for so doing, to deprecate the proposed shelving of our most able and most representative diplomatist, at a critical period, by the application of a hard and fast superannuation rule. Lord Lyons may be seventy, and he has never been physically a very active man, but intellectually he is in the prime of his vigour, and we shall not know how much we lose in him till he has gone, if, unfortunately, he is made to go. It is difficult to overestimate the effect which Lord Lyons' admirable direction of the British Embassy in Paris has had upon the relations of England and France. They are far from good, it is true, but it is really difficult to say how bad they would have been by this time had it not been for the ability, the un-

failing courtesy, the splendid hospitality, and, above all, the patience of Lord Lyons. England is well served in many ways and by many men, but it must be admitted by all who know what Lord Lyons has done for us, that it is not possible to find a man to efficiently replace him. Lord Lyons is a man of a very curious type, not only unenergetic, but, shall I say, even lazy physically, hating to put his head outside his door. He is, officially, the most energetic of men. Always seeing the right people at the right time, writing as much as all the other ambassadors and ministers of Great Britain put together, in the enormous private correspondence which he constantly carries on ; writing always with his own hand, never writing an unnecessary word, for his letters are always clear and always to the point, Lord Lyons has never practically been a lazy man, except indeed when pressed by his Government to say or do something which he thought would irritate the French without really benefiting British interests. Then Lord Lyons is a lazy man. The patience of the most energetic or of the most obstinate of Foreign Ministers would wear itself out before he induced Lord Lyons to actively press at Paris a claim or an object of this nature; for Lord Lyons possesses a staying power and a power of resistance which are the most British of all his British qualities. I believe that Lord Lyons was never but once known both to be really angry and to show it in the course of his career. This was when it was stated in Parliament by one of the Irish members that he himself had been followed by Government spies in Paris, and when it was not at the same time explained that the spies—if spies there were—had not been employed by the Embassy, and had not reported to Lord Lyons. This anger is characteristic, because Lord Lyons is essentially an English gentleman, and has managed to deal successfully in the course of a long life with a great many people who were not what we call gentlemen, without ever forgetting his own position for one moment, or letting them forget it either. In a capital where ministers set spies on one another, and ambassadors set spies on their own friends, Lord Lyons did not like to be even for one moment so much as suspected of having set spies upon those who were at that time the confessed enemies of his country. He has no illusions upon the subject of the Governments of France, or indeed upon any subjects of any kind, and some might call him cynical, but he is as kind as he is courteous ; and if fairly peaceable working relations are to continue to exist at all between England and France, it is Lord Lyons who must preserve them, as long as he will consent to do so.

THE STATE OF OUR TRADE.

I PURPOSE to inquire into the alleged depression in trade—its nature, extent, causes, consequences, and the remedies suggested. A large subject, truly, and one requiring careful examination as to facts, and at the same time a certain amount of boldness in the handling. If ever there was a time when plain speaking was necessary, it is now. A large portion of the English people, it seems to me, lose their heads under two totally opposite sets of circumstances: one, when a wave of great prosperity sweeps over the land, and the other, when there is an ebb tide and more than the usual or average expanse of shore is to be seen. We had ample evidence of the former set of circumstances, and of their effect on sober-minded people, in the years 1871—1873, and of the latter from 1876 to the close of 1879. We have now a recurrence of the same low fever which in 1877—1879 so distracted the nation, and led some of us to think that there was more truth in Thomas Carlyle's biting sarcasm as to the sanity of the population than we cared to admit. Recently this mental aberration has been aggravated to a large extent, not by actually intensified suffering, but by agitation and "demonstrations," by speeches in Parliament and on the platform, by newspaper and magazine articles, and by books and pamphlets without end.

The truth with respect to our actual position as a trading nation has been well-nigh hidden under a mass of verbiage, complaints, and shallow generalizations. Even our "statesmen" scarcely seem to know where to seek and find the "gem of purest ray serene," so utterly obscured is it by the fictions with which it is surrounded and enveloped. Of course, I am aware that I am laying myself open to attack for thus daring to open fire in this uncompromising fashion; but I leave the facts to speak for themselves, and abide the issue without fear or trembling.

The first question to which I have to address myself is the alleged depression in trade—the qualifying word being used intentionally as the sequel will show. The word "depression" has two distinctive meanings: it is here used, in the first instance, in the sense "to press or weigh down—to push down to a lower state or position." It also means "to lower in value:" this aspect will be dealt with further on. In the first case the volume of trade is meant, in the other its value. It is most important that this distinction should be kept in view.

In order to ascertain whether there is a depression in the sense in which the term is generally understood and used, we must first of all

find out when, and under what circumstances, the volume of trade was at a higher level than it now is, and has been for some years; and secondly whether the higher level, if attained, was normal or abnormal. What is called "Trinity high-water mark" in the Thames is the natural, so to speak, or common point reached at flood tide; but now and again we find that the tide rises above the Trinity-mark, as the waterside people know to their cost. In the ebb and flow of trade we note the receding wave more than the on-flowing, and we begin to murmur lest the tide should never turn again. A once very popular French author has described how Adam beheld the sun sinking in the West for the first time, and thought that it had gone for ever. Similarly, at periods of real or comparative depression in trade, during every decade in the present century, we find men mourning over the decay of British commerce, the ruin of British trade. We can trace with tolerable accuracy each decade from 1816 to the present time, and in each mark the ebb and flow of commercial and industrial activity, and quite as plainly recall the sad bemoanings of numerous Cassandras over the decaying supremacy of dear old England in the markets of the world. But as the Phœnix is said to have risen again from its own ashes, so British trade has survived what was thought to be its death-agony.

The facts as regards commerce and trade are available for all men who have the industry and patience to collate and compare them. They are to be found in the Board of Trade returns, in the numerous other Blue Books and Reports issued by the authority of Parliament, and especially as touching some aspects of the question, in the Diplomatic, Consular, and similar Reports pertaining to foreign countries. Occasionally some fussy persons have been heard to throw doubts upon the accuracy of these sources of information. If they are incorrect, fallacious, or incomplete, by all means let a demand be made to Parliament for fuller and more accurate reports; at present, however, they are the only reliable sources—and a vast storehouse of information they are; and they must hold their ground until we have some better and more trustworthy guide. That they are not free from error I well know; sometimes one report differs from another in trifling particulars; but in the main they agree, and the divergences are so slight generally that they may be passed over without comment, inasmuch as they do not materially affect the soundness of the conclusions arrived at. The mass of figures in these reports must tell their own tale—the writer being responsible only for the accuracy of the figures quoted. If these are questioned my critics must supply more accurate data; I know of none to compete with them.

The complete facts as to the actual volume of trade are not

available, except inferentially. In some departments they are fully, in others only partially given; but the value will always indicate the volume with tolerable exactitude when the comparative prices are taken into account. It is now more than ever necessary that relative prices should be considered, seeing that they are lower, generally speaking, than they ever were before. In order to make the survey complete the reader must be prepared to follow closely certain figures which have been compressed and condensed to the utmost extent compatible with clearness, completeness, and exactness.

I. As the total Imports and Exports gives not only the gross value of our commerce and trade, but some idea as to its vast extent, or volume, a comparison of the gross totals at stated periods will indicate our relative position, and also our still proud pre-eminence in the markets of the world. One word as to the comparisons here instituted. The practice of picking out particular years, or taking any two years for comparison, for the purpose of bolstering up a theory, is opposed to the logic of statistics, and calculated only to mislead. It would indeed be possible to construct almost any theory out of a mass of figures dealing with widely different matters, by selecting and arranging them with an ulterior object. But figures faithfully put tell a true tale, and point their own moral, in a way that is unmistakable.

Here are the gross totals and yearly averages of the total imports and exports for the last fifteen years, in periods of five years each, and for last year, 1885, by way of comparison, as a test of depression, in volume and value:—

Periods. Years.	Aggregate of Imports and Exports.	Gross Increase. Imports and Exports.	Yearly Averages. Imports and Exports.	Yearly Increase. Imports and Exports.
	£	£	£	£
1870-4	3,181,236,010		636,247,202	
		Decrease.		Decrease.
1875-9	3,160,278,746	20,957,264	632,055,749	4,191,453
		Increase.		Increase.
1880-4	3,529,744,418	369,465,672	705,948,884	73,893,135
				Decrease.
1885	——	——	642,371,649	63,577,235

An examination of the tables, from which the above figures are taken, shows that in no single year, prior to 1880, did the gross value of imports and exports approximate to the totals for 1880, 1881, 1882, 1883, and 1884; and the total for 1885 was only exceeded in the years 1872, 1873, 1874, 1875, and 1877. But taking the annual averages, even the aggregate of 1885 amounted to £6,124,447 more than the average from 1870 to 1874, and £10,315,900 more than the average from 1875 to the close of 1879. Transhipments are not included in the preceding table, because they form no part of British trade, except as regards shipping; but it may be stated that

the variation during the last fifteen years amounts in value to only about a million sterling, the decrease being from 1875 to 1879, whilst the recovery from 1880 to 1884 nearly equalled that in 1870—1874. In 1885 the total was about half a million under that of 1875—1879.

The inference from the figures before given is that there was an enormous expansion of trade from 1880 to the close of 1884, both in volume and aggregate value; but when we remember that prices were down during the whole period, as compared with the previous ten years, and especially the five years 1870—1874, then the clear conclusion is that in volume the expansion was marvellous beyond all former experience—even beyond that of the period when it advanced "by leaps and bounds."

Let us now see in which class the falling off was greatest—imports or exports. The following table gives each separately, in the gross, and the yearly averages:—

	Imports.		Exports.	
Periods. Years.	Totals.	Increase.	Totals.	Increase.
Totals.	£	£	£	£
1870-4	1,730,336,670		1,450,899,340	
				Decrease.
1875-9	1,875,276,579	144,939,909	1,285,002,167	165,897,173
				Increase.
1880-4	2,038,181,810	162,905,231	1,491,562,608	206,560,441
Averages.				
1870-4	346,067,334		290,179,868	
				Decrease.
1875-9	375,055,316	28,987,982	257,000,433	33,179,435
				Increase.
1880-4	407,636,362	32,581,046	298,312,522	41,312,089
		Decrease.		Decrease.
1885	370,967,955	36,668,407	271,403,694	26,908,828

The above table is worthy of close attention, for it shows a large increase of imports, and a still larger decrease of exports during the five years ending 1879 as compared with the five previous years, ending 1874. The enormous diminution in the volume and value of trade during the quinquennial period 1875—1879 might well cause a feeling of despondency among all classes, but the more than corresponding recovery from 1880 to 1884, especially in exports, ought to inspire us with hope, and give confidence as to the future. It is true that in value the exports only increased some eight and a quarter millions sterling in 1880—1884 over 1870—1874, but in volume the increase was far beyond what is generally believed. Then the exports during 1880—1884 increased by no less than £41,312,089 annually over the five preceding years, 1875—1879, during which time prices were lower than at any previous period. It is also true that in 1885

the exports fell by nearly twenty-seven millions sterling, and the imports by thirty-six and a half millions sterling, but the real significance of that fact must be dealt with under the next table.

The best criterion by which to judge of our actual trading condition is by a comparison of our net imports—that is, the imports left for home consumption, after deducting the re-exports, given in the returns under the head of "Foreign and Colonial Merchandise," and which only reach our ports to be passed on to their destination elsewhere—with our net exports; that is, our exports of British and Irish produce, raw and manufactured, in whatever stage it may leave our shores. The Foreign and Colonial merchandise here excluded forms no part of our real imports, or of our native exports, and therefore should be eliminated, except in so far as it swells our commercial trade, especially as to shipments. It is a source of profit, and has to be taken into account in estimating the totality of our trade, and our commercial relations with all parts of the world; hence it is included in the foregoing tables. The following are the gross totals and annual averages in each case, with the relative proportions of Foreign and Colonial added:—

Period. Years.	Aggregate Net Imports.	Total Increase.	Foreign Imports.	Colonial Imports.
	£	£	£	£
1870-4	1,453,070,385		1,096,138,323	356,932,062
1875-9	1,597,653,316	144,582,931	1,210,408,420	387,244,896
1880-4	1,717,994,203	120,340,887	1,275,462,661	442,531,542
Averages.				
1870-4	290,614,077		219,227,665	71,386,412
1875-9	319,530,663	28,916,586	242,081,684	77,448,979
1880-4	343,598,841	24,068,178	255,092,532	88,506,308
		Decrease.		
1885	312,608,761	30,990,080	235,701,620	76,907,141

Exports.	British and Irish.	Annual. Increase.	To Foreign Countries.	To Col. Possessions.
1870-4	1,173,633,055		871,404,059	302,228,996
		Decrease.		
1875-9	1,007,378,904	166,254,151	674,264,510	333,114,334
		Increase.		
1880-4	1,171,375,001	163,996,097	767,576,294	403,798,707
Averages.				
1870-4	234,726,611		174,280,812	60,445,799
		Decrease.		
1875-9	201,475,781	33,250,830	134,852,914	66,622,867
		Increase.		
1880-4	234,275,000	32,799,219	153,515,259	80,759,741
		Decrease.		
1885	213,044 500	21,230,500	135,114,874	77,929,626

The preceding table is most instructive in every way, for it indicates the actual condition of British commerce and trade, and it exhibits the relative value of Colonial as compared with Foreign markets, both as regards the importation of produce, and the exportation of British goods. In one respect the figures which form the

basis of the above abstract are most humiliating—namely, that, notwithstanding the immense progress of our Colonial possessions during the last thirty years, the ratio of our exports has not increased. In 1854 we exported to the Colonies and other possessions about 35 per cent. of the total exports of British and Irish produce; during the last five years that ratio is scarcely maintained, so that our foreign exports still remain at about 65 per cent. of the whole, in spite of the keen competition of foreign countries in many departments of industrial and commercial enterprise. At the same time it is satisfactory to observe that there has been a tolerable expansion of our export trade with the Colonial possessions of the British empire since 1879, as compared with the previous ten years. The slight check last year even contrasts favourably with the larger decrease observable in connection with our exports to foreign countries.

A close examination of the table above given will show that there was simultaneously in the period from 1875 to the close of 1879 a large increase of net imports—nearly equal to 29 millions sterling, and an enormous diminution in our exports—over 33¼ millions sterling annually, or a gross increase of 144⅓ millions sterling in the imports, and an aggregate diminution in exports of British and Irish produce alone of 166¼ millions sterling in the five years, as compared with the previous five years. At no time, before or since, was the contraction so serious as regards our net export trade. During the succeeding five years, 1880-1884, there was an expansion of trade to the extent of 284½ millions sterling, 120½ in net imports and 164 millions sterling in British and Irish exports, or 24 millions and 32¾ millions sterling each annually. The decrease in 1885 was equal in value to 31 millions in imports, and 21¼ millions sterling in exports—a very serious decline, it must be admitted; but in the latter case it was less by some 12 millions sterling than the yearly decrease from 1875 to 1879 inclusive. The recovery and enormous expansion of our export trade from 1880 to 1884 inclusive, as compared with the preceding five years, leave ground for the hope that still further recovery and expansion await us, if our manufacturers and merchants will only study the tastes and requirements of foreign and colonial customers, and supply goods worthy of our former fame in quality and workmanship, and in adaptability according to needs and circumstances in each case.

II. A few words with respect to the course of trade will probably enable us to ascertain in which direction we have to fear a diminution, and indicate where we may look for expansion in the export of British and Irish produce and manufactures, if the history of the past may be taken as any guide in a matter so liable to variation from causes not always calculable beforehand, though generally discernible afterwards. The numerous countries with which we have commercial relations may be roughly divided into two classes, com-

peting and non-competing, as regards manufactured goods, though the line of demarcation is at times a faint one.

Taking what we here call the non-competing countries first, we find that imports from Russia during the last fifteen years, relatively to the whole, stand thus: 1870-4, 6·4 per cent.; 1875-9, 5 per cent.; 1880-4, 4·3 per cent.; a continuous decline. The exports to Russia were 1870-4, 8 per cent.; 1875-9, 6 per cent.; 1880-4, 6 per cent.; that is to say, they were stationary for ten years. Italian imports have declined from 1·2 per cent. in 1870-4 to 1 per cent. in 1875-9, and to 0·7 per cent. in 1880-4. The exports to Italy from 1870 to 1874 stood at 2·6 per cent.; in 1875-9 at 3·0 per cent.; in 1880-4 at 2·7 per cent.; decline 0·3. In the matter of imports Turkey stands as she did in 1870-4, at 2 per cent.; there was a decline to 1·8 per cent. in 1875-9. Exports to Turkey have declined thus: 1870-4, 3·4 per cent.; 1875-9, 3·5 per cent.; 1880-4, 3·2 per cent. Egyptian imports have declined as follows: 1870-4, 4·1 per cent.; 1875-9, 2·5 per cent.; 1880-4, 2·2 per cent. Exports to Egypt: 1870-4, 2·8 per cent.; 1875-9 1·2 per cent.; 1880-4, 1·3 per cent. China exported 3·3 per cent. in 1870-4; 3·6 per cent. in 1875-9; 2·6 per cent. in 1880-4. The exports to China were in 1870-4, 2·6 per cent.; in 1875-9, 2·3 per cent.; in 1880-4, 2·1 per cent. Exports to Japan have increased from 0·9 per cent. in 1870-4 to 1 per cent. in 1880-4, a decline however of 0·2 compared with 1875-9. Taking the whole of the non-competing countries, there is a relative decline of about 3 per cent. on the total imports, compared with thirty years ago, and singularly enough the total increase in the ratio of our exports to these countries is about 3 per cent.: a very small development surely. What is the reason?

The relative condition of imports from and exports to competing countries stand thus:—Germany, imports: 1870-4, 5·4 per cent.; 1875-9, 6·1 per cent.; 1880-4, 6·2 per cent. Exports: 1870-4, 11·1 per cent.; 1875-9, 10 per cent.; 1880-4, 7·7 per cent., showing a decline of 1·1 and 2·3 per cent., respectively, during the last ten years. Holland, imports: 1870-4, 3·9 per cent.; 1875-9, 5·1 per cent.; 1880-4, 6·1 per cent. Exports: 1870-4, 6 per cent.; 1875-9, 5 per cent.; 1880-4, 4 per cent., a decrease of 2 per cent. Belgium, imports: 1870-4, 3·8 per cent.; 1875-9, 3·5 per cent.; 1880-4, 3·4 per cent.—a decrease of 0·4 per cent. Exports: 1870-4, 2 per cent.; 1875-9, 2·8 per cent.; 1880-4, 3·2 per cent., increase 1·2 per cent. France, imports: 1870-4, 11·6 per cent.; 1875-9, 11·6 per cent.; 1880-4, 9·7 per cent. Exports: 1870-4, 6·8 per cent.; 1875-9, 7·5 per cent.; 1880-4, 7·2 per cent., a decrease of 0·3 per cent. as compared with 1875-9, but an increase of 1·4 per cent. over 1870-4. United States, imports: 1870-4, 18 per cent.; 1875-9, 21·6 per cent.; 1880-4, 23·7 per cent. Exports: 1870-4, 14·1 per cent.; 1875-9, 9 per cent.; 1880-4, 12·2 per cent., a decrease of 1·9 per cent. as compared with 1870-4, but an increase of 3·2 per cent. over 1875-9. These ratios

show that there was a decrease of 4·3 per cent. in our export trade to Germany and Holland, but a recovery to the extent of 5·8 per cent. in our exports to Belgium, France, and the United States, so that there is an increase equivalent to 1·5 per cent. in the exports to competing countries. The hard fact that stares us in the face is that we cannot expect any very large expansion of our export trade to those countries, for they are now able to manufacture goods for their own consumption, and even to cultivate an export trade.

Our Colonial trade is a matter of vital importance to us, inasmuch as it is supposed that we have some kind of moral claim upon our Colonial possessions, if not an actual control. Let us, therefore, examine the relative condition of trade with those countries which own allegiance to the Crown. The ratio of trade with the several Possessions stand thus:—British North America, imports, 1870-4, 3 per cent.; 1875-9, 2·8 per cent.; 1880-4, 2·8 per cent. Exports: 1870-4, 3·6 per cent.; 1875-9, 3·5 per cent.; 1880-4, 3·8 per cent.; an increase of 0·3 per cent. in 1880-4 over 1875-9. West Indies, imports: 1870-4, 1·8 per cent.; 1875-9, 1·8 per cent.; 1880-4, 1·4 per cent. Exports: 1870-4, 1·3 per cent.; 1875-9, 1·5 per cent.; 1880-4, 1·3 per cent.; stationary. Australasia, imports, 1870-4, 4·7 per cent.; 1875-9, 5·8 per cent.; 1880-4, 6·5 per cent. Exports: 1870-4, 6 per cent.; 1875-9, 9·1 per cent.; 1880-4, 9·4 per cent.; increase 3·4 per cent. over 1870-4. British India, imports: 1870-4, 8·7 per cent.; 1875-9, 7·6 per cent.; 1880-4, 8·7 per cent. Exports: 1870-4, 8·5 per cent.; 1875-9, 11·3 per cent.; 1880-4, 12·9 per cent—increase 4·4 per cent. The Cape, Natal, &c., imports: 1870-4, 1 per cent.; 1875-9, 1·1 per cent.; 1880-4, 1·4 per cent. Other British Possessions, imports: 1870-4, 2·8 per cent.; 1875-9, 3 per cent.; 1880-4, 2·7 per cent. Exports: 1870-4, 4·8 per cent.; 1875-9, 5·2 per cent.; 1880-4, 4·5 per cent.—less by 0·3 in 1880-4 than in 1870-4. The relative proportions stand thus: Foreign Countries, exports: 1870-4, 74·4 per cent.; 1875-9, 66·9 per cent.; 1880-4, 65·5 per cent.—continuous decrease amounting to 8·9 per cent. British Possessions, exports: 1870-4, 25·6 per cent.; 1875-9, 33·1 per cent.; 1880-4, 34·5 per cent.—continuous growth, amounting to 8·9 per cent. On the other hand the total increase of imports amounted to only 1·5 per cent. Those figures prove the necessity for further developing commercial intercourse with the Colonies, and most people will agree that such a policy would be to the mutual advantage of the mother country and her dependencies.

III. The next point of importance is the classes of goods which show a falling off, and consequently indicate a diminished output in British and Irish manufactures and produce. It is not possible within the compass of a single article to give the returns for every industry—a few of the leading, or chief branches of trade must suffice. Coal and Iron being the two great factors in productive industry, let us see

what the relative output has been during the last sixteen years. Coal: average output per year, 1870-4, 120 millions of tons; 1875-9, 133 millions of tons; 1880-4, 156 millions of tons, or 3·79, 3·97, and 4·43 millions of tons per head of the population respectively. In 1885 the output was 159 millions of tons, or 3 millions above the average of the preceding five years. This shows an enormous increase in production amounting to 13 millions of tons in 1875-9 over 1870-4 annually; and of 23 millions of tons in 1880-4 over 1875-9. The output of Pig-iron was as follows: 1870-4, 6·4 millions of tons annually; 1875-9, 6·4 millions of tons annually; in 1880-4, 8·1 millions of tons annually, or an increase of 1·7 millions annually during the five years ending 1880-4. In 1885 there was a decrease to the extent of 0·7, or nearly equivalent to three-quarters of a million of tons, but still showing an increase over the ten years ending 1879 of one million of tons—not a sufficient growth to give any real comfort to the iron trades.

But we must look to the exports in order to see the state of trade, because these are usually referred to as the test of prosperity. The following table gives a synopsis of our export trade in coal and iron for the last sixteen years, the annual averages being given for quinquennial periods, and the totals of 1885 for comparison:—

Description of Articles. Exports.	Averages. 1870-4.	Averages. 1875-9.	Averages. 1880-4.	Averages. 1885.
	£	£	£	£
Coal	12,621,542	15,057,773	20,120,517	22,710,335
Steam Engines . . .	2,567,965	2,239,071	3,597,096	3,724,799
Other Machinery . .	5,286,289	5,314,750	7,935,408	7,362,070
Totals, Machinery . .	7,854,254	7,553,821	11,532,504	11,086,869
Pig and Puddled Iron .	4,592,561	2,888,311	4,261,660	2,092,816
Bar, Angle, Bolt, and Rod	3,196,073	1,948,360	2,133,001	1,620,484
Railroad Iron, all sorts	9,424,750	3,838,009	5,456,469	3,905,259
Iron Wire (not telegraphic Iron) . . .	604,203	678,235	955,741	689,238
Hoops, Sheets, and Boiler Plates . . .	2,926,407	2,075,887	3,664,898	3,268,143
Tinned Plates	3,347,664	3,170,356	4,543,094	4,427,695
Iron, cast and wrought	4,459,289	3,795,041	4,300,717	4,013,108
Steel, manufactured, unwrought, and blends.	2,129,949	1,612,664	2,273,243	1,432,560
Old Iron	495,079	244,976	544,339	261,435
Totals: Iron and Steel	30,979,974	20,881,840	28,133,162	21,710,738
Totals: other metals and wares and Steels	14,253,978	11,916,826	13,490,175	12,132,587
Aggregate Totals . .	53,088,205	40,352,487	53,155,841	44,930,194

The foregoing figures are very instructive and impressive. In the first place they show that we are exporting annually at an accelerated rate the fuel which has done so much to create and maintain our commercial greatness and ascendancy. In the second place, that we are exporting the machinery by which our former customers are enabled to manufacture their own goods, and to compete with us in markets hitherto mainly supplied by England. And in the latter case the machinery so supplied is the best that can be produced, having all the latest improvements and appliances for executing orders speedily, cheaply, and of the best quality. The increase in the exports of machinery has been at the rate of 3½ to 4 millions sterling in value during the last six years, and in quantity very much larger, the decrease in value last year being but trifling, though the decrease in price, as compared with the previous ten years, was enormous.

The decrease in the exports of pig and puddled iron last year brought it nearly to the average level of 1875-9, but taking the five years 1880-4 the annual average was nearly equal to that of the years 1870-4. Taking railroad iron, there was an increase in 1885 over the five years 1875-9, and the increase during 1880-4 over the same period amounted to £1,616,460. In hoops, sheets, boiler plates, and tinned plates there was a very large increase in 1880-4 over the previous ten years, and the increase was well maintained in 1885. The totals of iron and steel show an increase in 1880-4 over 1875-9 of 7½ millions sterling, but there was a decrease of nearly 7½ millions last year, bringing the total to within about £829,000 of the average in the five years 1875-9. In other metallic wares there was a slight increase in amount, and in the totals of all kinds there was an increase last year of 4½ millions sterling over the five years 1875-9, while the aggregate yearly average increase in 1880-4 over 1875-9 was equal to 13 millions sterling. The tonnage exported during the last six years was largely in excess of any previous period in nearly if not quite all the classes of goods comprised in the preceding table.

The next group of articles, namely, textile fabrics, is scarcely inferior in industrial importance to those comprised under the coal and iron trades; indeed, for a long period the condition of the textile manufactures has been regarded as the real touchstone of British trade, the test by which all other trades are to be judged and the prosperity of the country measured. A comparison of the exports in the several branches of textile manufactures will furnish a standard by which to judge whether in this staple industry England is fairly holding her own, or whether her sun has begun to decline, having passed the meridian, instead of being merely under a cloud.

The woollen trades being more distinctly native, and depending chiefly upon home consumption, claim the first place. A comparison of the imports and exports will show the relative condition of those industries during the last sixteen years. The figures next following show the average imports, re-exports and net imports, of raw wool, and British exports :—

Periods.	Total Imports.	Re-Exports.	Net Imports.	Exports of British Produce.	Exports of Yarn, Woollen, and Worsted.
	lbs.	lbs.	lbs.	lbs.	lbs.
1870-4	311,034,828	126,492,154	184,542,674	9,155,237	37,744,573
1875-9	396,326,014	195,037,398	201,288,616	10,444,974	30,823,585
1880-4	485,021,839	264,222,285	220,799,556	16,536,900	32,157,800
1885	505,687,590	267,501,675	238,185,915	23,459,500	43,491,600

The above figures show a large and continuous increase in the net imports of wool, the quantity left for home consumption in 1885 being largely in excess of the average during the previous five years, and that average was nearly 20 millions of pounds over the five years 1875-9. The exports of British and Irish produce show similar progress, and the export of yarn last year was over 11 millions of pounds in excess of the preceding five years. This does not look like ruin. There was, however, a great falling off in the domestic clip, and has been ever since 1869. This falling off affects agriculture.

The next table gives the exports in quantities of the several kinds of woollen goods, and the gross average annual value of all exports, wool and yarn included :—

Periods.	Cloths and Coatings mixed and unmixed.	Stuffs, mixed and unmixed.	Flannels and Blankets, &c.	Carpets and Druggets.	Total Yearly Value of Exports, Woollen Goods, &c.
	Yards.	Yards.	Yards.	Yards.	£
1870-4	37,537,632	286,431,598	14,910,108	10,255,379	32,223,634
1875-9	43,390,327	209,462,696	14,594,419	6,717,558	24,944,780
1880-4	50,363,160	193,435,580	15,001,600	10,519,660	22,911,061
1885	45,954,500	198,764,100	17,182,300	11,082,500	18,847,053

The above table tells its own tale. The only real falling off is in the export of stuffs, mixed and unmixed; in all other respects the trade appears to be fairly good, except that in values the decrease is enormous and continuous. The home trade, however, has been tolerably prosperous, as compared with the five years 1875-9.

The condition of the cotton trade and other textile industries may be represented by the following comparative tables of yearly

averages, the quantities, &c., being given in millions, and decimals of thousands :—

Periods.	Raw Cotton Imported.	Raw Cotton Re-exported.	Raw Cotton Net Imports.	Raw Cotton Home Consumption.	Increase per cwt.	Consumption per head of Population.
	Millions of cwts.	Millions of cwts.	Millions of cwts.	Millions of cwts.	cwts.	lbs.
1870-4	13·6	2·4	11·2	10·7		37·5
1875-9	12·7	1·7	11·0	10·9	Decrease. 6·2	36·3
1880-4	15·3	2·1	13·2	13·0	Increase. 20·0	41·2

The net imports in 1885 were a fraction under the average of the five years 1875-9 (represented by 0·1) ; but the increase of 20 per cent. in the previous five years, 1880-4, was substantial.

The exports of cotton goods may be represented thus :—

Periods.	Yarn Exported.		Piece Goods Exported (Plain).		Piece Goods Exported (Printed).	
	Millions of lbs.	Increase. Millions of lbs.	Millions of yards.	Increase. Millions of yards.	Millions of yards.	Increase. Millions of yards.
1870-4	205·51	54·60	2,409	640	1,037	163
1875-9	232·41	26·90	2,621	212	1,048	11
1880-4	248·88	16·47	3,122	501	1,371	233
1885	245·80	3·08	3,149	27	1,224	147

There is nothing in the above table to make us wring our hands in the agony of despair. Taking the average of the last six years the exports show a very large increase. The prices are much lower, but so also is the cost of raw material, and the cost of production. The total yearly value of the exports of cotton manufactures for the previous fifteen years has averaged as follows : 1870-4, £59,832,104 ; 1875-9, £55,055,743 ; 1880-4, £62,877,917. In 1885 the value of such exports fell to £55,111,393, or nearly to the level of 1875-9. The value of cotton yarn exported fell similarly. The total net imports of manufactured cotton goods was and is inconsiderable, those for 1885 being below those for any year since 1875. The total was £1,438,604, against exports amounting to £55,111,593. The total value of net imports of cotton manufactured goods has never reached two millions sterling in any one year. In 1885 the value exceeded that of 1868 by £400,000.

In the other textile trades there have been fluctuations and changes, but not any serious decrease on the whole. The exports of linen

piece-goods declined 0·8 per cent. in 1880-4 as compared with 1875-9; but in the previous quinquennial period, 1875-9, the falling off was 47·55 per cent. compared with 1870-4. On the other hand, the exports of jute manufactures have very largely increased during the last six years. Silk goods and mixtures show a decrease of imports and an increase of exports during the last six years as compared with the preceding five years. And miscellaneous exports connected with textile industries show a small advance.

Among the various other trades of the country doing an export trade, few have really declined in quantity, but all have suffered from diminished prices, and consequently loss of profits.

The shipping trades from 1880 to 1884 developed in such a marked manner as to throw every previous period of progress into the shade. The zeal of shipping companies and of shipbuilders outran the dictates of prudence, and a terrible collapse followed. But in tonnage, capacity, and speed, we not only stand at the head of the whole world, but have increased the lead so enormously that competition by the "foreigner" is out of the question. The limits of space forbid any further statistical tables being used in support of the contention that our vast trade and commerce are not seriously impaired, that the checks we have suffered are temporary rather than permanent, and that in comparison with other nations we still hold our own. If the recent scare as to the possible decline of Britain's commercial greatness should teach some salutary lessons to merchants and manufacturers, and stimulate the Government to pay more attention to the trade interests of the country both at home and abroad, then the cloud which has hung over us will show its silver lining, our hopes will be revived, and our hearts will be gladdened once more.

IV. The real "depression" in trade is to be found, not in diminished production, nor in a decreased export trade, but in lessened values, the prices of produce and of manufactured articles having declined enormously, as compared with the prices realised in 1872-3. There is no sufficiently wide and accurate record extant by which to gauge the actual fall in prices in every branch of trade, and of all articles in each branch; but enough is known to enable us approximately to estimate the relative effect of the acknowledged fall in the price of commodities upon the aggregate trade of the country, as regards values, and by inference upon the volume or quantity. The most reliable data by which approximately to estimate the decline of values and the corresponding increase in volume was furnished by the Board of Trade in 1885, from which report the following condensed summary is given for 1873, 1879, and 1883, the figures for 1885 being based on the estimate of a further decline in prices in 1884 and 1885 of 10 per cent. in the two years. This estimate is a moderate one.

	Total Imports.			British and Irish Exports.		
	Declared Value.	Values at Prices of 1873.	Ratio of Increase.	Declared Value.	Values at the Prices of 1873.	Ratio of Increase.
	Millions, £.	Millions, £.	Per cent.	Millions, £.	Millions, £.	Per cent.
1873	371	371		255	255	
1879	363	438	13	191½	273	15
1883	427	512	30	240	349	25
1885	371	519	40	313	338	35

The ratio of increase is equivalent to the decline of prices, and it appears that values of imports have declined to a greater extent than those of exports, so that a small margin is still in our favour. It should be noted that the average prices of 1873 were higher than any on record, and the total trade in 1883 was the highest on record even at diminished values. Such figures, denoting such progress in actual trade, need no commentary. From another point of view Mr. Mulhall has recently computed the growth of trade during the last ten years, and he avers that whilst the population has increased by 12 per cent., trade has increased 29 per cent., and our shipping 67 per cent., so that trade has more than doubled in proportion to population, and shipping has more than quintupled during one decade. All available evidence concurs in this opinion.

V. *General Conclusions.*—It will be observed that the comparisons here instituted are based upon the condition of trade during, and the relative growth of trade since 1870-4, in which quinquennial period, as is well known, our commerce and trade advanced by "leaps and bounds." It was never contemplated at that time that the high fever pressure then attained would be or could be maintained, and yet every comparison since made takes those five years, and in some instances the highest point reached in any one of them, as a test of national prosperity or decay. Of course such a method is unsound, and the criterion itself is absurd. It would be just as reasonable to take the highest yield of wheat per acre in any one year, and constitute that yield the average. Nevertheless, the five years referred to are here accepted as the starting-point, and all subsequent progress is tested by the enormous averages then reached in our total trade, and in every branch of industry connected therewith. These then, taking those five years, 1870—74, as a starting-point, are the conclusions at which we arrive.

(1.) That during the next succeeding five years, 1875-9, there was a total contraction of trade, in values, to the extent of £166,254,151, or £33,250,830 annually, in British exports alone; at the same time there was an annual increase of £28,916,586 in net

imports; so that with a diminished export trade we were being drained of accumulated capital to pay for imports, instead of paying in kind by exports.

(2.) That during the following five years, 1880-4, the net exports of British and Irish produce increased by £163,996,097, or £32,799,219 annually, with a diminishing rate of net imports, the increase of which annually was £24,068,178, or less by £4,848,408 yearly during the five years 1880-84. The net exports in 1885 were £11,565,719 in excess of those for 1875-9.

(3.) That the diminished values in 1875-9 did not represent a proportionately large decrease in production, as prices had gone down in 1875, and were steadily going down during the whole of those five years.

(4.) That during the five years ending 1884 the fall in prices, as compared with 1870-4, was enormous, and the expansion of production was at least proportionately vast, as shown by the fact that the gross value of net exports was only £2,258,054, or only £451,611 yearly, less than in 1870-4.

(5.) That the fall in prices has affected the commercial and trading classes to a larger extent than the producers, or, in other words, the masses of the population; and even the former, as well as those with fixed incomes, have been partially compensated by the general cheapness of commodities of all kinds.

(6.) That the condition of agriculture during the last ten years has materially diminished home consumption, and consequently has tended to decrease manufacturing production, inasmuch as the agricultural population form a very considerable proportion of the entire community.

(7.) That diminished profits have resulted to the extent probably of 10 or 12 per cent. from the appreciation of gold and the depreciation of silver, but to what extent the prosperity of the country has been affected thereby is not quite so clear.

(8.) That prices have fallen by the keenness of competition at home and abroad, but more especially by the close competition of British merchants, the effect of which has been to reduce the profits of manufacturing industry to a minimum.

Some further considerations, with respect to the condition of the people, scarcity of employment, causes of "depression," and other matters connected therewith, must be left for another occasion, for want of space.

GEORGE HOWELL.

OUR NOBLE SELVES.

ENGLAND is suffering at the present day from a plethora of genius. She has more great men than she knows what to do with. Three generations go to a century: the three that make up this crammed century of ours have been indeed mighty and marvellous ones. The first was the generation of Keats and Shelley, of Scott and Byron, of Wordsworth and Coleridge, of Lamb and Landor. That was truly a generation rich in master-minds of the first order. The second was the generation of Tennyson and Browning, of Dickens and Thackeray, of Darwin and Spencer, of George Eliot and Matthew Arnold. That was a generation richer still in something like a rude numerical proportion to the increased population from which it drew its dominant spirits. The third is the generation we now see emerging from adolescence around us, the "young men" of fifty or under, whom a certain false shame of anticipating the verdict of time makes us always shy of naming individually. That is a generation richest of all, both in promise and performance; a generation pregnant with good men whose work in some cases has already received wide recognition, while in others it is known only to the little literary circle which is not afraid of judging for itself, and praising great things wherever it sees them.

I know at the very outset that my thesis is a paradox. It has been a paradox in all ages. The great men of the generation that is just passing away are known to everybody as great men, because the world has found them out, and set the stamp of its tardy approval upon them. Can anybody doubt that these are great? Are not their photographs to be seen daily, displayed in the windows of the London Stereoscopic Company in Regent Street? Is it not certain that Tennyson is a true poet—because he is a lord, and you find his green-covered volumes in everybody's library? Is it not certain that Ruskin is a wonderful thinker—because all the spectacled ladies in Oxford thronged the Sheldonian when the Slade professor was announced as lecturer? Who can refuse to dead Thackeray, or dead George Eliot, the tribute of a genuine and outspoken admiration? We publish *éditions de luxe* of their novels. But the great men of the generation among which we actually live and move and have our being—that, of course, is a totally different matter. Many of them are still quite young; and the notion of a young man being really great is in itself of course quite too ridiculous. To be sure, Keats died at twenty-four, and was only an assistant in a doctor's shop in London. Shelley was no more than thirty when his sailing-

boat capsized off St. Arengo, leaving behind it *Prometheus* and *The Skylark*. Even Byron was but thirty-seven when rum and fever carried him off between them at Missolonghi. But then, that was a long time ago, and they are all now dead and buried. That a living young man should possess genius is as inconceivable as that a living physicist should be greater than Newton, a living painter greater than Raffaelle, or a living playwright greater than Shakespeare. What fallacy could be more transparent?

And yet, after all, when one comes to think of it, why not? For strange as it may appear, Shakespeare himself was once nothing more than an ordinary actor, well thought of by the playgoers of his day, but not to be mentioned in the same breath with poets of gentle origin like Spenser, or thinkers of learning and dignity like my Lord Verulam. When Mr. Newton was an undergraduate of Trinity, inventing in his own rooms at leisure the method of fluxions, who could have believed it had they been told in a whisper that the young gentleman in the grey coat over yonder was the profoundest mathematical genius in all Europe? When George Eliot, a bookseller's hack, was translating Strauss's *Leben Jesu* for a miserable wage, who would have accepted the confident prediction of her friend Mr. Herbert Spencer (author of an occasional scientific paper in the *Leader* and the *Westminster*) that the plain woman with the long chin who talked metaphysics would become the most popular novelist of her time in modern England?

It is fashionable nowadays (as it has been always) to complain that all our great writers and thinkers are dead or dying, and who is there left to replace them? Dickens is gone, our critical Cassandras tell us with a sigh in the *Athenæum* and the *Saturday*: Thackeray is gone; George Eliot is gone; even Trollope and Reade have been taken from us. Carlyle has ceased from his lifelong wail; Darwin has left the less fit to survive; Mill has joined the voteless majority. Macaulay and Lytton disappeared from their peers a decade or so earlier. Disraeli has reinforced his friends the angels. Across the Atlantic, Emerson, Longfellow, Hawthorne sleep in Sleepy Hollow; Lowell, Holmes, and Whittier belong to the elder and passing generation. With ourselves, the few great names still left loitering are equally those of reverend seniors. Tennyson, Matthew Arnold, Newman, Herbert Spencer, Ruskin, and Browning have all seen their best working days; and where are the juniors who ought to be taking their vacant places? If one ventures to suggest a rising name or two in reply, the objector has always an easy answer. "Young So-and-so? Ah, he writes poems, does he? No, no; I never heard of him." Or else, in a more dogmatically negative form, "You don't mean to say you think that fellow, What's-his-name, who did the papers on Siamese butterflies in *Nature*, is the equal of

Darwin or Wallace or Lyell?" "What! the author of those pretty little essays in *Blackwood?* You can't consider him on the same line with giants like Carlyle and Macaulay and Ruskin?" The fact is, these men still labour, like Pitt, under the fatal defect of being young: as young as Tennyson and Thackeray and Herbert Spencer were, at their age, and no younger.

Look at the critical journals of thirty or forty years back, and you will find exactly the same complaint made, and with exactly the same measure of reason. The great age, our Cassandras told us then, had clean passed away: the Virgils and Livies had been gathered to their fathers; "it is all Prudentius and Claudian with us nowadays." "Keats is dead; Shelley drowned; Byron killed by Greek fever; Scott has disappeared; Wordsworth grows old; Lamb lives on the Company's pension; Southey has sunk to imbecility under stress of his own amazing poems; Coleridge has finally befogged his muddled brains with too much opium and metaphysics. All the grand old men of the grand old days are dead or dying; and who is there left to replace them?" Why, young Mr. Tennyson, who wrote those silly sing-song verses of *Oriana;* young Mr. Dickens, the author of those vulgar catchpenny *Pickwick Papers;* young Mr. Thackeray, who hangs about the clubs, and failed with the *Luck of Barry Lyndon.* Then there's that strange man Browning, whose crabbed jingle nobody understands, and that wild enthusiast, Ruskin of Christ Church, who has gone congenially mad over that equally mad landscape-painter, Turner. But of course nobody would ever dream of comparing amiable and estimable youths like these with such souls as Byron and Scott and Southey! (It was Byron and Scott and Southey then: nowadays it would be Keats and Shelley and Coleridge.)

So men spoke in the brief apparent interregnum between the two great literary British empires of the nineteenth century. They did not know they then stood on the very eve of a sudden outburst of thought and art unequalled in our island since the spacious days of great Elizabeth, when "England became a nest of singing birds." At that very moment England was once more just brewing and seething with a mighty leaven of fresh motives and fresh intellects. Dickens and Thackeray, Tennyson and Browning, by no means exhausted the list of budding geniuses. George Eliot was reading German metaphysics and making silent studies for the *Scenes in Clerical Life* at her own Nuneaton; Carlyle was groaning over the French Revolution, and tracking hatless Danton through the packed streets of Paris; Darwin was watching earthworms at Down and observing the strange habits and manners of intelligent orchids in his own conservatory; Herbert Spencer was discovering that his sphere in life lay not in the construction of new railways, but in the

building up of the System of Synthetic Philosophy; Matthew Arnold was quietly inspecting schools and mystifying the world with the *Strayed Reveller;* Charlotte Brontë, on her Yorkshire moor, was writing *Jane Eyre* in a crabbed little hand on broken scraps of paper by the flickering firelight at Haworth Rectory. I don't mean to say that all these events were strictly contemporaneous to a year and a day—I am not writing for a Quarterly Reviewer to vivisect me—but at the very time when futile complaints about the barrenness of the younger generation were flooding the papers, all these great men and women were alive and at work in their full prime, as great as they ever were, or perhaps, because unknown, a trifle greater. All the chief writers and thinkers who made the decades from 1850 to 1880 into a mighty period of English literary history had reached maturity and years of harvest in 1845—a date which most people would probably pitch upon as representing the very blackest and lowest depths of the supposed interregnum.

It is just the same at the present day. A few of the very greatest names have dropped out rapidly in the last ten years or so; a few more are likely in the average course of nature to drop out in the next twenty. But England is not in want of others to replace them. Quite the contrary; *fortes creantur fortibus et bonis.* Never, I believe, were literature and thought so rich in good men and true under fifty as they are at this moment. All the available protoplasm in the country was not used up in the production of Tennyson and Arnold and Browning. The reason why no two or three names emerge conspicuously as yet among the younger men is not because there are none to emerge, but because, on the other hand, there are far too many. We live in an age when high genius is a drug in the market: the supply of originality, of brilliancy, of first-rate workmanship far exceeds the effective demand. Writers and thinkers of prime magnitude positively swarm upon the pavements of London: if you want a poet, an essayist, a philosopher, a romancer, you can hire him anywhere in the Temple or at the clubs for the modest remuneration of a guinea a page. At no other age of English literature could any man have written such finished poetry as the *Proverbs in Porcelain,* the *Dead Letter,* the ballad of *Beau Brocade,* and yet not be recognised as standing in the front rank of English poets. At no other age could a man have written the *Dynamiter* and the *New Arabian Nights,* and *Through the Cevennes with a Donkey* without being proclaimed in every house a perfect master of absolutely pellucid and exquisite English style. Even among the men of an older generation, at no other age could a poet have produced *Juggling Jerry* and *Phœbus with Admetus,* and *Martin's Puzzle* without being generally and popularly known as a thinker and worker of the first order. At no other age could even a police magistrate have remained absolutely

ignorant of the *Earthly Paradise*. But in our own time men may do such work in abundance, and yet be comparatively overlooked in the mighty throng of struggling genius that we see blindly surging everywhere around us.

The reason for this curious state of things is not far to seek in modern England. Every gate is thronged with suitors; all the markets overflow: and the publisher's gate is thronged like all others; the book-market overflows with wit and wisdom. In a small provincial town—at Gabii or Fidenæ—the "clever man" of local opinion soon emerges into local consequence; *sed Romæ durior illi conatus*. In London or Paris he is lost in the crowd, and no man distinguishes him from all his fellows. So it is on a larger scale with the packed and jostling England of Victoria as compared with the roomy England of Elizabeth. When the British people numbered some five millions each individual retained a certain stamp of individuality; every man of parts had his fair chance in the game of life; whatever he wrote or said or acted was duly judged on its own merits by a critical audience. But now when the real strength of Britain, European and extra-European, amounts to something like a hundred million souls—for obvious reasons I include America, I exclude India—genius suffers acutely from over-production; it exposes itself to the fashionable struggle for existence; like Comus's world, it is strangled by its waste fertility; no one or two great men among so many can easily overtop by head and shoulders the vast throng of first-class talent awaiting its *sportula* at the doors of the libraries. Mr. Mudie, throned within as Plutus to our modern Apollo, dispenses impartially his daily dole of thirty-one and sixpences to some twenty thousand clamorous applicants. Our magazines, whose name is now legion, contain every month innumerable papers which in any age except the present would have sufficed to secure their author a solid reputation. We glance over them hastily in our easy-chairs, skim their profoundity, smile at their humour, approve their style, appraise their matter, never look at the writer's name at the end, and toss the volume when finished into the waste-paper basket. The social leaders in some of our London penny papers are masterpieces of wit and epigram and satire—pearls cast before swine for the bulk of their readers—worthy of Sydney Smith at his best, or of Charles Lamb in his easiest and most graceful humour. Few read them; nobody dreams of asking who wrote them.

The fact is, in London to-day, genius swarms in every department. Parnassus teems from Piccadilly to Highgate. Young Chattertons print their genuine poetry in the weekly papers, no man hindering but no man regarding them. Young Heines show their snarling teeth or preach Pantagruelism in the Saturday journals. Young Murgers tread the Bohemia of Hampstead, and dream im-

possible Arabian Nights of extraordinary imaginative force and brilliancy. Young Poes invent new murders in the Rue Morgue, and fill the magazines with fresh adventures of the immortal Prince Florestan. You cannot take a walk down Fleet Street any day of the week without encountering wits and poets such as Johnson and Burke never chanced to meet on their afternoon rambles. Jonathan Swift, unknown and unnoticed, pours forth volume after volume of delicate irony and scathing sarcasm, with sardonic laughter unheard of gods or men, from some commodious villa in Peckham or in Canonbury. Isaac Newton, with big calm brows and measured speech, corresponds no longer with Leibnitz or Huygens, but sinks his mighty European fame in a dissertation on the causes of the Polar ice-cap. Our little world is far too full. No man nowadays can emerge from the ruck—the common ruck of divine genius—until he has completed at least his entire half century. At fifty we are still promising young men; at sixty we may, with good luck, be spoken of as rising writers. Now and then, to be sure, a Swinburne makes good his claim by storm, to be reckoned among the ranks of the immortals, or a Hugh Conway goes up like a rocket, to fall, a most unmistakable stick, on the morrow. But these are always illegitimate successes. It was not his undeniably true poetic qualities that awoke the public attention to the Bard; it was the audacious apparition of *Poems and Ballads*, naked and not ashamed, that aroused the world with a start to the sudden consciousness of a fresh poet. So too with Mallock and the New Republic. Bar novelists, who still sometimes carry the world by assault, no writer or thinker can now rise to the modest level of popular appreciation till he has slowly and laboriously lifted himself hand over hand on a steep ladder, each of whose many rungs represents in time and work a full twelvemonth.

The vaster the mass of good work done, the harder becomes the task of discrimination. Not because, as people love to say, we have now a wide dead level of mediocrity: quite the contrary: but because we have a wide field of the highest excellence which in any other age would have merited and obtained in every case immediate recognition. It is fashionable always to ignore this fact, to conceal our knowledge of living men's virtues, to join in a vast "conspiracy of silence" as to the genius and learning of one's own contemporaries. Why thus? "De mortuis nil nisi bonum," if you will, but why of the living nothing but harsh criticism? It is so easy to sneer, it is so hard to be generous. Any fool can praise you Shakespeare or Milton; and any fool can laugh down an unknown aspirant. It was so simple for Christopher North to poke fun at Tennyson: Tennyson had not then accepted a peerage. If, while Keats still lurked in the back surgery, a discerning critic had boldly said of him, "This young dispenser is at this moment one of the truest English poets that ever

breathed," all the world would have laughed incredulous. The haunters of clubs would have said with a cynical smile, "Young Mr. Keats's poems are very pretty in their own way, no doubt, though somewhat wild and lawless in manner; but as to calling him a great poet, why really, you know——" No criticism is so killing as an aposiopesis. And so, too, in our own days, if one ventured to oppose to the known names of the elder generation the unknown but not less great names of the picked juniors, all the world would laugh with equal incredulity. "Never heard of them before in my life!" As though anybody ever heard of anybody else until the time when he first heard of him.

Those who don't know, say nothing, because they have nothing at all to say. Those who do know, hold their tongues, because a certain unworthy false shame makes them diffident about setting up their own opinion as a standard of criticism for other people. I often notice with amusement how measured and sparing and tentative (as of a snail feeling its way with its horns) is the praise which one good man bestows in a review upon another good man of his own generation. I observe how he hedges and attenuates and qualifies: how he keeps his own generous enthusiasm well in hand for fear it should run away with him before the eyes of sneering bystanders. I read how So-and-So's verses almost remind one in places of Shelley's early bad manner: how the best of So-and-So's new stories attain to something like the height of Thackeray's minor performances: how So-and-So's essay in the last *Westminster* is not wholly unworthy at times of the first attempts made by Macaulay. Unstinted praise of living authors, however deserved, is avoided with an almost Greek terror of Nemesis. I have heard dozens of people say in private—what is the obvious truth—that the *Ordeal of Richard Feveril* is the greatest novel ever written in the English language. But I never saw anybody say so in print: and I know why; because *Richard Feveril* still remains half unknown, and they are all afraid of getting laughed at by fools who can only appreciate high merit after it has received the final stamp of popular approbation in illustrated two-shilling paper covers. No one shrinks from praising Thackeray duly, or Fielding excessively; because Thackeray and Fielding are both stone dead, and everybody now has learnt (after being often told so) that Thackeray and Fielding are very wonderful novelists indeed. But I myself, who have the courage of my opinions, am afraid to say openly what I feel and know about Robert Louis Stevenson, about Austin Dobson, about half-a-dozen other real geniuses of our own time, not because I mind the public sneer myself, but because those for whom I feel a profound admiration are afraid on their own account to face it. I once imprudently called a friend a true poet in a daily paper (knowing him to be one) and he wrote me back a letter by the first post to complain bitterly that I had made him ridiculous

before the foolish face of the British public. And yet I suppose there must be sometimes true poets, who are true poets even in their own lifetime. Or do they only become poets at all, I wonder, after their quick tongues lie silent in the dust, and their right hands have lost their cunning? You may see people open their eyes wide in astonishment if you speak of Herbert Spencer as the greatest philosopher that ever lived; and yet they are not in the least astonished if you say the same thing about Aristotle or Kant or even Bacon.

There were giants in those days. That is the common and *naïf* belief of all unsophisticated and thoughtless humanity. The giants, to be sure, are never with us: they tower gigantesque only in proportion as they fade away into the dim mist of historical perspective. Through that fallacious haze of time and repute, men loom always larger than human: stand too near, and you see them only in their natural size, as five feet ten in their stocking feet, and measuring round the chest thirty-eight inches. And yet they are giants none the less, in earnest: for though no man, we know, is a hero to his valet, that, as Hegel justly remarked, is not because the hero is no hero, but because the valet is only a valet. Contemporaries can seldom understand any form of greatness that does not come to them marked with the guinea stamp of official approbation. They will never believe that the man's the gold for all that. My Lord Duke in his big house they can readily appreciate, and even recognise for the most part in the street, for has he not a coronet painted on his carriage? The President of the Royal Academy or of the Royal Society, the Poet Laureate, the Vice-Chancellor of the University of Oxford, the Archbishop of Canterbury, the Lord Chief Justice—these also are tangible realities, with robes of office and many letters tacked to their names—LL.D., and F.R.S., and K.C.S.I., whatever that may be—which enable all men to see at once that here we have to deal with real genuine indubitable greatness. But how can the purblind public believe, while he still lives, that the excise officer who dwells in the little cottage there, and fuddles his brain with a pack of vulgar cronies at the village public, is the Poet Laureate of Scotland for all time, to be remembered when Buccleuchs and Argylls and Hamiltons and Atholes have gone to their own place, consigned for ever to merited oblivion? How can they believe that the dirty unshaven ill-bred Scotchman in the small house by the waterside at Chelsea, who talks broad Ecclefechan and omits to change his linen regularly, is the most wonderful master of pictorial description that ever put pen to paper in England? And how in our own day can they believe that the tall young man with the stoop over yonder, who passes unnoticed down the village street, is the greatest living artist in English style, or that the handsome fellow in the light overcoat, who strolls unobserved through Piccadilly, is the

most versatile humourist, essayist, and versifier that Wild Wales has ever begotten?

These things the public can never conceivably discover for itself. All the more need, therefore, that those who can discover them should publish their discovery everywhere broadcast, proclaiming it on the housetops, and making it possible for a man to be somewhat known before his grandchildren lose their hold upon his copyrights. When a great poet has resumed the inorganic condition, it is small consolation to him that his Complete Works should be edited and emended in sumptuous forms by Mr. H. Buxton Forman. He wants recognition, and not infrequently he wants bread also: but he wants them both during his own lifetime. He greatly prefers enough to eat while he still lives, to a handsome memorial tablet above his mouldering bones in Westminster Abbey. When he asks for bread, do not give him a stone, even if it bear his own face in a neatly cut medallion by Boehm or by Thornycroft. In order for men to be known, however, it is necessary for the few who are capable of judging to speak out boldly and frequently without false modesty. We have heard a great deal of late about some mysterious operation known as Log-Rolling: as a matter of fact, there is not half log-rolling enough in the ranks of contemporary English literature. Throughout all ages, the men who had anything in them, the men who were going to rise, and did in the end actually rise, have had from the first a generous appreciation for one another's real merits. Knowing good work from bad when they saw it, they early picked one another out from the mass of honest but second-rate writers: they formed a little freemasonry of culture—if you will, a clique, a coterie, a mutual admiration society. But they admired mutually because they knew each other to be really admirable. "Cedite Romani scriptores, cedite Graii"—what is that but the most unblushing log-rolling? Look at Ben Jonson's lines on the Droeshout portrait of Shakespeare: what would our Quarterly reviewers say to such open and unconcealed cliquish adulation? Nobody now thinks of accusing Johnson or Burke or Reynolds or Goldsmith of "the vile arts of mutual puffery:" everybody sees that they stood together because they recognised each other's ability. So, if you read the memoirs of the literary generation just passing away, you will find that Mill acknowledged Carlyle, and Carlyle acknowledged Mill, long before the *French Revolution* or the *System of Logic*. Lyell saw what was in Darwin while the *Origin of Species* was still in embryo: Lewes knew Herbert Spencer for himself when *First Principles* were still floating indefinitely in the air: Spencer in turn foretold George Eliot, when George Eliot posed only as a *Westminster Reviewer*.

What we need, in short, is more strenuous and more open log-rolling. "Our Noble Selves" makes a very good toast for rising

talent. At this moment the enormous mass of young English intellect is for the most part mutually known to itself, and its final success mutually predicted. But in order to ensure that happy consummation, in order to push the good new literature and thought and humour and science down the recalcitrant throats of a careless and uncritical public, what we want is a long pull and a strong pull and a pull all together. Shoulder to shoulder, set the log rolling. It is only by the consistent and persistent hammering of those who know that anything ever gets hammered at all into the thick heads of the British people. (America, to be sure, is somewhat more receptive; but then plastic America pays only in praise, not in dollars.) Twenty years ago Herbert Spencer was by far the greatest thinker the world contained. But only a few sympathetic minds on either side the Atlantic had then found him out: if the world at large knows him nowadays, it is because for twenty years his sympathisers have lost no possible opportunity, in season or out of season, of dragging in his name, his praise, his work, and his opinions into every book, magazine, or journal, where by hook or by crook they could manage to divulge him. Twenty years ago, George Meredith was by far the greatest artist of character and situation in the English language. But only a few appreciative critics at London clubs had yet taken the trouble to crack the hard nuts he set before them, and extract the rich kernel of epigram and wisdom: if the world at large begins to know him nowadays it is because the few who could grasp his enigmatic meaning have preached faith in him with touching fidelity till at last the public, like the unjust judge, for their much importunity, consents to buy a popular edition of *Beauchamp's Career* and *Evan Harrington*. I don't of course mean to say that this deliberate booming was necessary in either case for the recognition of those two great men's real greatness, on the part of the few adapted by nature for duly recognising it. The critics of England would have found out Meredith, the philosophers of the world would have found out Spencer, even without the aid of an occasional laudatory newspaper allusion. But the "blind and battling" mass around would never have found them out at all; and it is the blind and the battling that constitute society. As it has been possible thus to boom Herbert Spencer and George Meredith, so is it possible perhaps to boom the hundred best living authors of whose very names the blind and battling are still for the most part contentedly ignorant.

We live in the midst of the greatest outburst of thought and feeling and expression in England that has occurred at least since the days of Elizabeth. The movement of our own time has been a movement comparable only to that of the Renaissance and the Reformation in its wide-reaching effects on literature, art, science, philosophy, religion,

ethics, politics, and society generally. The world has seethed and fermented with great ideas—the religious emancipation, the socialist revolution, the cosmopolitanisation of the world, the evolutionary system, the vast fundamental physical concept of universal energy pervading the cosmos. In politics, ours is the era when the area of civilisation has spread from the Atlantic to the Pacific, the South Seas, and the Indian Ocean. In ethics, it is the era when the naked value of man as man has begun to dawn upon the conscience of humanity. In science, it is the era when the idea of gradual and regular growth from within pervading the universe has overridden the idea of miraculous beginning and continuance by perpetual petty external interference. In philosophy, it is the era when the relations of the boundless cosmos with itself have eclipsed the relations of minor parts with the mere percipient human intelligence. In every direction our concepts have widened. Europe has merged in the round world: the world has become a fraction of the infinite universe. Man has been recognised as a final outcome of evolving life: life itself as a final outcome of solar energy falling on the cooled and corrugated surface of a minor satellite. It is impossible that an epoch of such mighty changes should not profoundly affect the human intellect and the human emotions. It has profoundly affected them, and all the world over we find to-day an awakening of the mind of man such as never before perhaps was seen upon the face of our poor belated little planet.

In England, this fierce stirring-up of stagnant humanity to its profoundest depths, this universal whirl and ferment of opinion, has produced its necessary and inevitable consequences upon the growth and direction of the literary spirit. Science and letters have been served in our time by more devotees and with greater success than in any other previous epoch. The great thinkers and the great works of the last fifty years have indeed been innumerable: the great thinkers and the great works in our own day show no signs of falling off in any way. The movement has been continuous, constant, and at least equal. After Scott, Byron, Wordsworth, Coleridge, Lamb, Southey, Keats, and Shelley, came in due course Leigh Hunt, Landor, Tennyson, Browning, Matthew Arnold, Fitzgerald, William Morris, George Meredith, Swinburne, Austin Dobson. Dickens and Thackeray were followed fast by Charlotte Brontë, George Eliot, Charles Reade, Wilkie Collins, Anthony Trollope, James Payn, and Walter Besant. Lyell and Herschel and Owen led on without a break to Darwin, Hooker, Lewes, Spencer, Wallace, Huxley, Galton, Clifford, Lubbock, and Tylor. Mill and Macaulay gave place successively to Newman, Carlyle, Ruskin, Freeman, Froude, Goldwin Smith, John Richard Green, Lecky, and Frederick Harrison. How can we talk of a falling off when we have still with us, not only so

many of these great names, but also so many newer and younger men of immense promise and immense performance? John Morley and Leslie Stephen still pour out for us limpid virile prose of exquisite finish. Robert Louis Stevenson still keeps up for us the highest traditions of English humour and English imagination. Symonds and Pater, Cotter Morrison and Saintsbury, all give us work of a kind that in its own way has rarely been equalled in English literature. Justin McCarthy, Blackmore, William Black, Besant, Hardy, Mrs. Oliphant, Mrs. Lynn Linton, Norris, Henry James, Mallock, Christie Murray, Robert Buchanan, Baring Gould, and Hall Caine worthily keep up the unbroken succession of English novelists. Even among the much younger men, touches of distinct and recognisable genius streak through Rider Haggard's *King Solomon's Mines* and Guthrie's *Vice Versâ*. Lawrence Oliphant, Clark Russell, and James Runciman deserve also not to go unmentioned. Among humourists, have we not Samuel Butler, the greatest master of caustic irony in the English language, and "Lewis Carroll," the creator of Alice, that absolute empress in the realm of clever nonsense? In science, besides the giants of the last generation already named, have we not Tyndall, Bates, and Croll; Geikie, who has treated geology with a breadth and firmness of cosmical grasp to which no other thinker ever yet accustomed us; Balfour Stewart, who has thrown new vastness of conception into physical thought; Proctor and Romanes, Farrer and Maudsley, Boyd Dawkins and Evans, Ray Lankester and Thisleton Dyer, Karl Pearson and Rücker, the Darwins and the other evolutionary juniors? In philology, Max Müller and the drawing-room school have yielded place to thorough workers like Sayce and Rhŷs and Powell: in mythology they have given way to Tylor and Spencer, to Clodd and Farrer. And in general literature, through all its branches, how many names could one not still mention like Gosse and Frederick Myers, Alfred Austin and Julian Sturgis, Churton Collins and Comyns Carr, Theodore Watts and Sydney Colvin, Sime and Church, Shorthouse and Palgrave, Hutton, Bryce and Minto, Isaac Taylor and Sully, Hamerton and Christie, Trevelyan and Gardiner, Phil Robinson and Jefferies, Gilbert and Pinero? At no other time, I firmly believe, would it have been possible to find in the British Isles, I do not say merely so high a general average of distinct talent, but also so large and marvellous a sprinkling of indubitable genius.

There are as good fish in the sea as ever came out of it. Probably, there are some a great deal better. And as the sea grows more thickly peopled every day, the number of good fish must, other things being equal, increase in proportion. Moreover, other things are more than equal: the stir and ferment of the world are none the less but greater than ever. Periods of expansion are always periods of

high intellectual and emotional development. When the Mediterranean became a Greek lake, Athens had her Æschylus, her Thucydides, her Aristophanes, and her Plato. When Rome enlarged her bounds to include the world—"Urbem fecisti quod prius orbis erat"—even Rome had her Catullus, her Lucretius, her Virgil, and her Tacitus. When Western Europe woke up to its new life, with the discovery of America and of the Cape route, which removed the centre of gravity of civilisation from the Mediterranean to the Atlantic basin, from Rome and Florence to Paris and London, England had her Shakespeare, her Spenser, her Sydney, and her Bacon. We live now at the very crisis of another and similar great expansive mundane movement. As civilisation once widened from the Ægean to Great Greece and Sicily; again from the eastern basin of the inland sea to the Mediterranean at large and peninsular Europe; and once more, from the Mediterranean itself, right about face, to the Atlantic coasts of either continent from Spain and Scotland to Virginia and Mexico; so now, it is widening yet another time to include California, Japan, Australia, New Zealand, the whole Pacific, the South Sea Islands, the entire stretch of Africa, of America, of China, and of India. Our relations with all the maritime or accessible world have undergone a complete change; England has carried her landmarks to the ends of the earth; Atlantic cables, Pacific railways, Suez canals, Mont Cenis tunnels, have brought us nearer by five thousand miles to everybody everywhere. We run across to Chicago for a summer holiday; drop in at Delhi for a Christmas vacation; cruise in the *Sunbeam* among the Pacific archipelagos; picnic under arms among the Boers and Zulus. Our Edwins are cowboys on American plains; our Angelinas Red Cross sisters in Bulgarian villages; our Norvals feed their flocks among New Zealand sheepwalks; our Gileses and our Hodges sow fall wheat on Manitoban prairies; our Tommy Atkins discourses familiarly at the village pothouse of Suakim and the Cataracts, of Majuba mountain and the Khyber Pass. Everywhere our sphere has rapidly widened from the four sea walls of the isle of Britain to the great oceans that gird and connect the continents of our planet.

The psychical expansion exceeds even the physical; our outlook on the cosmos has widened yet faster than our outlook on the material world around us. Evolution has been a peculiarly English idea: and it has brought us into relations with sun and star, with plant and animal, with matter and energy, with the inmost core and background of things, in a way that neither Plato nor Aristotle, Moses nor Augustine, Descartes nor Leibnitz, Kant nor Fichte, Hegel nor Schopenhauer, ever before brought us. We have seen "space swell visibly," as it swelled for De Quincey in his ecstatic trances. We have seen time expand before our very eyes, till æon upon æon

fades insensibly in geological and cosmical perspective beyond us. We have seen life melt into physical and chemical action, mind into nerve-tremors, matter into sensation, and all into a single unknowable substratum, which is neither body, soul, nor spirit, but something above and embracing every one of them. Even those who know it not, our very poets and novelists and triflers, our theologians who disown and disclaim it, our everyday business men who reck not of its being, yet feel unconsciously the undercurrent and undertow, or, it may be merely the recoil and reaction, of this mighty wave of secular emancipation. Our ideas have indeed widened with the process of the suns. The narrow thoughts, the petty sympathies, the anthropocentric creeds, the anthropomorphic gods that once sufficed us will no longer satisfy the yearnings of our enlarged natures. New beliefs and new impulses gather strength and head within us; a larger utterance follows as of course; literature and science echo the age: an age that rolls down the abysses of time as conscious as ours does, cannot fail to pour forth its full heart in profuse strains of unpremeditated cosmical music. The present is richer far in genius than the past: the future bears within it the "promise and potency" of a still richer and nobler harvest than the present.

SMALL FARMS.

THE subject of the cultivation of land, its difficulties and its prospects, is one of vital importance in the pr ‘ critical condition of agriculture. Fortunately for the welfare of the community, questions of importance are, in this country, made matters of wide-spread discussion, and are subjected to the severe but salutary treatment aptly described as being "threshed out." In political circles this process is carried on by means of Royal Commissions and Parliamentary committees and debates. Among the general public it is carried on chiefly by articles and by letters which appear in periodicals and daily journals. The subject before us is eminently one of a nature which must derive benefit from the "threshing out" process, which eliminates the chaff of fallacies and misleading remedies from the solid grain of experience and sound views.

In the course of the remarks I am about to make, I propose to consider the question of land cultivation in general, and I will explain the reasons which lead me to entertaim the belief that, although no precise rule can be laid down as to the most desirable size for farm holdings, yet it will be found that the balance of advantage will in the future rest with farms of considerably smaller size than has been the fashion of late years. I will also touch on the subject of those still smaller holdings which are adapted to the requirements of agricultural labourers and artisans, men whose means are limited to the hiring of portions of about thirty or forty acres or the purchase of one or two acres.

This question of small farms has already been dealt with in the press by men whose practical and theoretical knowledge of the subject entitles them to speak with authority, as well as by others whose lack of knowledge or experience might well induce them to keep silence. Though not wishing to class myself under either of these heads, I will endeavour to give some of my own experiences of land, in prosperous as well as in troublous times, together with some observations made in the course of my recent connection with "The Small Farm and Labourers' Land Company."

As a preliminary remark, I may say that never during the present generation has there been a time so favourable as the present for the purchase of land in small quantities. The taste of large landowners, and still more the means they possess for rounding off their estates by the purchase of adjacent farms, have, I may say, disappeared. Sporting advantages are less valued than formerly, and the political advantages derived from the possession of large estates have in great measure

passed away, although the moral influence exercised by conscientious resident landowners is perhaps even greater now than ever it has been. Those who were formerly buyers of land are now more frequently desirous to become sellers, and are probably in many instances only waiting till prices are more tempting, to release themselves from what is often little better than an expensive burden, too heavy for them to bear.

Tenant occupiers of large farms, if they can be induced to continue their holdings at all, will do so now only on terms which are satisfactory neither to themselves nor to their landlords. Engagements to pay rent under leases are broken and treated as waste paper, and ordinary repairs, which were formerly done by the occupier, he now expects to be done for him by the owner. "Anything to keep a tenant on his legs" is the advice landlords give each other, and better advice can hardly be given, although the best mode of carrying it out is far from being as simple as may at first sight appear. "Lower your rent" is the first remedy that occurs to the public, and lower it again is the second idea that presents itself. Tenant farmers would be more than human if they did not concur in such a policy—a policy which is indeed to a certain extent not only unavoidable but commendable.

But simply lowering rents will not suffice to keep tenants on their legs. To landlords, lowering rents means cutting off not only the luxuries, but in many cases the necessaries of life, and it also entails their withdrawal from the legitimate expenditure on land improvements which should properly devolve upon the landlord; the ultimate result of this being necessarily an impoverished condition of the farms, and consequently an increased inability on the part of tenants to pay even the reduced rental.

If landlords find themselves unable to let large corn farms, they should, when possible, divide them into smaller mixed farms, and thus adapt them to the altered condition of affairs; a condition which is becoming decidedly adverse to corn-growing. Wheat must, indeed, always remain the staple of English agriculture. There is no plant under cultivation that makes so ample and generous a return for the care bestowed on it as the wheat plant, and there is no crop that approaches it in value to the agriculturist. But during the height of the great French war of the beginning of this century, when the price of corn was at an average of 92s. per quarter, and in 1812 and 1813, when it averaged between 106s. and 122s. per quarter, large tracts of land, although of a nature not well suited to corn-growing, were brought under wheat-cultivation. While land of first-rate quality will always continue to be advantageously devoted to wheat-growing, land of somewhat inferior quality should be utilised for other purposes to which it is better adapted.

The cost of labour can, in many cases, be reduced, and the value of land at the same time increased, by laying some portions of it down with two-thirds grass and one-third arable, instead of keeping it at the present proportion, which is generally two-thirds arable to one-third grass. But this process costs money, and while landlords are lowering rents, they cannot reasonably be expected simultaneously to carry out land improvements, however much these may be needed. And in addition to this difficulty, there is the further drawback that laying down land in grass necessarily throws farm labourers out of work.

The subject known as the "labour question" is one of the many difficulties which the large farmer has to contend with, and it is an ever increasing one. Even at the apparently low price at which labour now stands in the south of England, the labour bill is still a costly item. There must always be many days in which the farmer pays and employs labour at little or no advantage to himself. There are, moreover, always faithful old labourers whom no master on earth could find it in his heart to disestablish or to dispossess of their cottages, although he may sorely want to bring in younger and stronger men.

Yet farmers do not find lowering their labourers' wages to be any panacea for their difficulties. A parish where labour is low means a parish where young and strong men are conspicuous by their absence. Facilities of communication and of locomotion have opened new fields of employment, and lads who formerly remained attached to their native soil now seek active careers elsewhere, and find employment in spheres which in former times were practically closed to them. On the other hand, high daily wages, unless the labourers are very closely watched, by no means always ensure a full day's work.

The difference between work done by the piece and work done by the day is remarkable. It shows the reserve of strength which a labourer can retain in his own possession after his day's work is over, and it points to the desirability of substituting task or piece work for day work whenever practicable. At piece work a man frequently shortens his hours, increases his labour, and changes his time for eating, resting, and ending work, according to his inclination or convenience, often much to the advantage both of himself and of his work.

I recently noticed the rapidity with which a piece of roadmaking was carried out in winter in my own neighbourhood. The hours adopted by the men were as follows: they began work at 7 A.M., stopped for a quarter of an hour between 10 and 11 for what is called "bever" (I presume a corruption of the old French term "buvoir"); they ended their day's labour at 3.30 P.M., and went home to a hot dinner.

By thus shortening their hours and concentrating their energies, they did better both for their employer and for themselves.

There are, however, practical difficulties which prevent the doing of certain agricultural work by the piece. Nevertheless, the system might be extended and more widely adopted than it now is, with results advantageous both to employer and employed. Whatever conduces to the welfare of the labourer must react beneficially on his employer, by increasing his physical vigour and his intelligence. Suitable and profitable employment for the labourer's leisure hour is a matter of importance, and farmers who have given attention to this matter all admit that farm labourers have sufficient time at their disposal after their hours of work to cultivate a plot of land varying in size from an acre downwards.

The definition of what should constitute an allotment will probably give rise to discussion in Parliament. The Romans measured land by what a yoke of oxen could plough in a day. I think we may fairly adopt for an allotment what a pair of horses can plough in a day, which is about an acre, and which is, generally speaking, as much as a man can do justice to, consistently with hiring himself out as a farm labourer. As an illustration of what can be got out of an acre, I am tempted to give *verbatim* a conversation I had on the 11th October with a Berkshire labourer, who has worked twenty years for the same master, and who also owns an acre of land:—

"How have you got on this year?"

"Oh, pretty well; nothing to complain of; I sold my crops standing, and got £7 10s. for the barley."

"How much barley did you grow?"

"As far as I can judge, I grew ten sacks; leastways, that's what Mr. W. put it at."

"How much land had you under barley?"

"Three-quarters of an acre; we little folks speak of it as roods. I had three roods under barley."

"What did you do last year?"

"Last year I grew wheat and harvested the crop myself. My cottage wanted thatching, and I thatched it soon after Michaelmas. I sold my wheat to the miller and made £7 by it."

"You can't grow a grain crop again next year. What will you sow?"

"The crop for next year is already sown and partly up. I sowed a bushel and a half of winter vetches, and a peck of beans."

"What was that last for?"

"Why, to keep the vetches standing. The vetches are for seed, and I shan't touch them again till next autumn, when I shall harvest thirty-two bushels of vetches and a sack of beans, which, at 5s. a bushel, makes 160s., and the beans into the bargain."

"What did it cost you to plant your vetches?"

"I ploughed the land once—leastways, Mr. W. did it for me, and then harrowed it and sowed it. I paid Mr. W. 10s. for the ploughing, and 5s. for the harrowing and sowing."

"What more were you out of pocket?"

"Nothing at all except what I tell you, and a little summat for seed."

"That leaves £8 profit on the three roods?"

"Yes, that is about it; after harvesting the vetches, which I can do myself."

"The remaining rood, I suppose, you kept for vegetables for yourself and family?"

"Yes; I grew two sacks of potatoes, and I sold damsons, plums, and currants, and we made £1 over that."

"What is the largest sum you have ever made off your acre?"

"I once made £12. We keep a pig or two, like other folks, and I don't find any particular difficulty about manure."

Thus much for the evidence of a Berkshire labourer. I will now instance the following more scientific treatment of an acre which has been shown to several practical farmers, who can detect no fallacy in the estimate.

	£	s.	d.
Cost of ploughing 1 acre	0	12	0
Harrowing and seed	0	10	0
Second harrowing	0	2	0
Rent and taxes	2	0	0
Manure—Autumn Sown:—			
¼ cwt. of superphosphate	0	1	3
¼ ,, steam bone flour	0	2	0
⅕ ,, kainit (potash)	0	1	4
Manure sown in Spring in two top dressings at an interval of a month:—			
¼ cwt. of steamed bone flour	0	2	3
½ ,, superphosphate	0	2	6
1¾ ,, nitrate of soda or guano	0	18	0
Total cost	£4	11	4
YIELD.	£	s.	d.
5 quarters at 32s.	8	0	0
2 tons straw	3	0	0
	11	0	0
	4	11	4
Leaving a balance of	£6	8	8

The gain to both landlord and tenant of anchoring good and capable men to the land by making them happy and comfortable in

their homes, is so great that less than the actual market price may well be accepted in the way of rent for allotments, more especially as there is no cost for erecting and repairing buildings.

A high scale of rent is, however, often charged for allotment holdings; and with regard to this point it should in justice be borne in mind that allotment land is often the best land in the parish. It is essential to the success of the system that the land should be adapted to its purpose, and should be of superior quality, or rather what labourers describe as "useful land" capable of growing varied crops, and of being worked at all seasons of the year.

The tithe, if any, should, in my opinion be paid by the landowner. But there is so much disadvantage in allowing workmen to remain ignorant of the public burdens—poor rates, highway rates, school rates, &c.—which fall on them in common with other parishioners, and which are for convenience lumped together, and paid by the landlord who includes them in the cottage rent, that in every case where the occupation exceeds one acre, the holder should, I consider, be made to pay the taxes himself. Especially is this important in view of the new burdens which local authorities may possibly impose on land.

The allotment system, already widely diffused throughout the country, seems destined to be still further extended by the legislative assistance promised for next session. But it is to be hoped that legislative influence will stop at the formation of allotments (as to the expediency of which all parties seem to be in agreement) as distinguished from small proprietorship. The formation of peasant proprietors is another matter altogether, and it is most important to keep the two questions apart. Should such a class ever be formed, it can only be the result of "natural selection," where circumstances favour it. "All the king's horses and all the king's men" cannot bring into being a class which does not spring naturally from the existing condition of things.

If small landowners should ever reappear they will be a totally different class from that of the old yeomen, who have been finally destroyed by the effects of free trade in corn. The small proprietors of the future will be village tradespeople and artisans; they will not be like the yeomen of old, solely dependent for position and maintenance upon their land, but they will mostly have other professions and employments on which they rely, and to which a small landed property will be an addition and a help.

As regards the possession of land, the prospects of small proprietors and labourers seem brighter than those of large landowners, whose income derived from their estates is annually diminishing at an alarming and ruinous rate.

Announcements of reductions of rent on the part of landlords, appear from time to time in the papers, as though the particular

reductions mentioned were something exceptional and deserving of special notice. But reductions of rent have been universal of late years, and it ought to be borne in mind that a reduction of 30 per cent. (a very usual one) means that the remainder of the rent is little more than interest on the outlay for permanent improvements which have been effected at the cost of the owner. No one knows this better than the tenants who cultivate the land.

Owners and occupiers of land may be compared to mountaineers roped together on an Alpine pass, and enabled by the mutual support they give each other to sustain the shock of agricultural depression. The manner in which both owners and occupiers of land in the United Kingdom have stood by each other is a splendid example to all classes, and is due mainly to the excellent relations which subsist between them, as well as to the sound system of this country, under which the rights of both are clearly defined. Under this system owners pay for all improvements that are permanent on the land, while the occupier or tenant pays for all acts of husbandry on the farm which (under the Agricultural Holdings Act) become their property, and which include improvements as yet unexhausted in the land. As an example of the plucky manner in which tenants are struggling with, and endeavouring to overcome their difficulties, I would instance that in some counties farmers are themselves starting a system for the direct retailing of the produce of their farms—meat, milk, butter, &c.—in their neighbouring towns and villages, which bids fair to result in considerable advantage to themselves. Under this system their own labourers often become their customers, and are enabled to purchase at low prices the less choice portions of meat, the skim milk, &c. The impossibility even in dairy districts of villagers purchasing milk has hitherto been a real grievance, and anything which will remove this is a distinct boon to the labouring population. This system of direct supply may be in some degree a departure from the ordinary habits of dealing with tradesmen, but the altered conditions of farming interests must inevitably lead to other changes in the social system, and landlords are in duty bound to support their tenants in any efforts they may make towards rendering their farm produce profitable to themselves. It is an incontestable fact that the many devices which have been resorted to with the view of giving to tenants a joint partnership with their landlords, such as long leases in England and Scotland, and the three F's in Ireland, have been found vain and delusive.

Long leases bind the landlord, but when times are bad they do not bind the tenant, and fair rents were no sooner fixed by law in Ireland than there arose a universal demand for their readjustment. Legal interference destroys the elasticity of friendly relations between landlord and tenant, and mixed ownership has the practical effect of destroying the owner's interest in his lands and his tenantry. Absolute

ownership of land is the only tenure which will bear the strain of the ups and downs of agriculture.

The disposition to invest accumulated fortunes in the purchase and management of land has been widespread during the last fifty years. There is not a county in England that is not largely indebted to men who have made fortunes in trade or business, and have invested those fortunes in the purchase of land, and also in its development and improvement. A belief in the security of real property, and a desire for the influence and position which it carries with it, are answerable for the purchase of many an acre. But it is to be feared that the new generation will be differently disposed with regard to the acquisition of land, which is coming to be regarded rather as a burden than as a profitable investment. The rich man will refuse to be hampered by the endless outgoings and moral obligations which a large landed estate entails; he will limit his landed possessions to such a size as will give him the position and interests of a country gentleman, cultivating his own land for the sake of the amusement and occupation it affords. Such changes can neither be prevented nor avoided. We must look them in the face, and direct our energies towards solving the problem of the future. The rapid growth and vast agricultural development of new countries beyond the seas have exercised an enormous influence upon the condition and welfare of the people of the Old World, especially upon those of this country. An agricultural revolution is going on around us, and those who are most affected by it cannot foretell its course. The farmers of the New World are making desperate efforts to wrench from the British farmers the profits, nay, the very existence of their trade, and the public look on with complacency, knowing that the battle which rages around them is being fought in their interest. Those who gain the day will become the chief purveyors of food for England.

The staggering blows which are hitting the British farmer through the drop in prices fall with equal severity upon his rivals beyond the seas—both sides are struggling for the vantage ground, and if the English farmer means to hold his own he must not only improve his old weapons but adopt new ones also. The courage and endurance which the British farmer shares with the British soldier will not suffice; other qualities must be called into play. More varied enterprise can alone enable the agriculturist of to-day to hold his own against the difficulties and discouragements that beset him. Too great reliance upon one branch of farming, and the neglect with which the British farmer has hitherto treated such minor industries as dairy-farming, poultry breeding, fruit-growing, &c., have contributed largely towards bringing about the present unsatisfactory state of affairs.

No favour or affection is displayed by dealers in agricultural produce; the most trifling advantage turns the scale on one side or the other. In the case of dairy produce, a small convenience afforded

by Normandy farmers to their customers renders their butter the most popular in the London market. Normandy butter comes to market all alike in quality and shape, French farmers having a brand to which they conform, while English farmers send their butter to market varying in shape and quality, according to accident or to the taste and fancy of each dairyman. A change might surely with ease be effected by which our English butter could be sold in uniform shapes, the dairymen of a given district joining in adapting a common brand.

Foreign countries import into the United Kingdom 130,750 cwts. of butter, 181,227 cwts. of cheese, and 742,978 great hundred of eggs per month; thus proving that a rich market exists, in which English farmers should aspire at least to share.[1]

Dairying is a subject which, except in certain districts, has hitherto not received the attention it deserves, and unless farmers devote themselves more thoroughly to the development of this branch of farming, they will continue to be outstripped in it by their foreign neighbours. Such details may seem trifling, but it is trifles such as these that turn the scale in the market, and it is only by diligent attention to details that farmers can nowadays hope to make any profits.

I have in these pages purposely avoided touching upon any remedies which require legislative interference. I have confined myself to those that come within the scope of the working farmer, and I have indicated some methods of utilising the means at our disposal, and some practical remedies for present troubles. But I am painfully aware of the inadequacy of any such suggestions to cope effectually with the gravity of the crisis through which we are passing, and the full extent and result of which we cannot yet realise. What we see around us is sufficiently serious to rouse even the most apathetic: everywhere landlords are having farms thrown on their hands, and reduced rents deprive them of the capital required to stock them, to such an extent that many tracts of land are going out of cultivation altogether. Tenant farmers are driven to reduce the number of their labourers and to lower their wages. At the present moment droves of agricultural labourers, out of work, are wandering up and down the country in search of employment. But dark as is the outlook, we may derive some encouragement by looking back and remembering that farming has passed through dark days in previous generations. A hundred years ago the agricultural interest was in well-nigh as critical a state as now. Reference to that condition of things is made in the *Journal of the Royal Agricultural Society* of 1844, by the Lord Spencer of that day, who, when writing on the subject of improvements in West Norfolk, remarked that he thought it a matter of interest to point out the means by which the then flourishing condition of the district

(1) See return of imports for month of October, 1886.

had been produced. With that view he had applied to Lord Leicester as the person who best recollected the wretched state of farming in Norfolk at a previous period. Lord Leicester described the former miserable cultivation round Holkham, the course of cropping at that period being three white straw crops in succession and then broadcast turnips; no manure was purchased; and very little (and that of no value) was produced on the farm. It happened that the lease of a large part of the land was within two years of its expiration. Lord Leicester offered to renew, but the tenant, Mr. Brett, refused to give the small additional rent of 2s. per acre demanded. Lord Leicester then took the land into his own hands. "Thus," says Lord Spencer, "the origin of the great improvement in the district was due to Mr. Brett, who deserves to have his name recorded for the great good he unintentionally did to the country by refusing to give 5s. for land which now produces four quarters of wheat per acre." Had Mr. Brett's rent been lowered instead of raised he would have renewed his lease for twenty-one years; during that period no improvement would have taken place, and Norfolk would never have emerged from the dark ages of farming, but would have continued to be considered as a district in which wheat could not be grown to any advantage.

Although history repeats itself, it seldom, if ever, does so under precisely similar circumstances. We do not in these days require pioneers like Lord Leicester to teach us the science of farming; but something quite as important has to be taught, and that is the economical use of the means at the disposal of the man who tills the land. Time, money, and labour have to be looked after with a vigilance unsuspected by many of our farmers, who cannot approach, nor even realise, the unflagging industry of foreign cultivators of the soil.

The peasant farmers of France have been described under various aspects. Sometimes they are held up for imitation as bright examples of industry and perseverance in the cultivation of their small holdings; sometimes they are represented as affording a warning and a caution against the effect of sordid habits, engendered by the narrow life they lead. Industry and thrift are, however, virtues which everyone admits them to possess in a high degree.

The men in our country who approach most nearly to the possession of those qualities which distinguish the French peasantry are the holders of small farms. But as regards the virtue of thrift, we have still much to learn from our French neighbours, for, considering the enormous sums which are paid in wages—especially in the north of England—it is remarkable how small a proportion is laid by in savings by our wage-earning classes. The attractions of the savings' bank are small, and there is nothing surprising in the fact that comparatively few avail themselves of its advantages.

To some men the opportunity of being able to purchase a few acres of land offers inducements of a much higher character. It is to encourage this legitimate desire for the acquisition of land that the "Small Farmers' and Labourers' Land Company" has been established.

The success of the company up to the present time is quite as great as could be anticipated, although its operations are limited by want of capital, and are consequently carried out on a scale very small and insignificant compared with what it might beneficially accomplish. Were the much-needed capital forthcoming, further purchases of land could be made on most favourable terms, and the advantages and facilities offered by the Company largely extended. At present it has been able to deal with two small estates only, one in Berkshire and the other in Cambridgeshire.

The Berkshire estate has now entered into the second year of its career under the auspices of the Company. The land is already all let, and in some cases portions are being bought by the tenants under the system of deferred payments. The directors have in every case given their tenants the option of purchasing their holdings. The system on which this can be done is illustrated by the following hypothetical case:—

Rent of holding (say)	£11 0 0
Price of purchase	222 0 0
First deposit required	22 0 0
Period of purchase	20 years.

The first deposit of £22 having been made, £200 remains due. £10 paid yearly would pay the £200 in twenty years. But interest at 4 per cent. has to be paid upon the undischarged portion of the debt till the final instalment is paid. As a matter of convenience for purchasers by instalments, the yearly payments are equalised by calculation. Instead of the interest gradually diminishing in proportion as the debt is paid off, a fixed sum is named and spread over each of the twenty years. In the above hypothetical case this sum would be £14 12s. 6d. It is however made optional to the tenant to pay off his instalments more rapidly, should he wish to redeem the land within a shorter period than twenty years.

In the event of the holder being unable to continue making his annual instalments of purchase-money, the Company undertake to sell the holding in the open market, and if it makes more than the holder had agreed to pay, he will receive all the benefit, the company taking back only what was due to them.

I here append the following list, showing the different callings followed by men who have applied for portions of land. The variety of their professions shows how widely diffused is the desire to possess and to cultivate land:—

Time-keepers	Agents
Engine-drivers	Gardeners
Furnace-keepers	Schoolmasters
Firemen	Compositors
Grocers	Butchers
Farmers	Corndealers
Cow-keepers	Shoemakers
Retired captain	Labourers
General dealers	

There are three sources from whence come the chief demands for small farms—1st, Village artisans, a class to be found in every small town and large village; 2nd, Agricultural labourers who have saved a little money; 3rd, Workers who have been earning wages in the great centres of industry. Men from all these three classes have taken land under the Small Farm Company, and many more are prepared to come forward were more land available.

I may mention two men who, after traversing the country in search of suitable spots wherein to settle, are now purchasing land from the Company under the deferred payment system. One, an Aberdeenshire man, has settled down in Berkshire, at Lambourne, as a colonist would in Australia or Canada, on land which, eighteen months ago, might well have been described as prairie land, being absolutely unenclosed and destitute of any shelter for man or beast. The Scotch emigrant has put forth all his energy, his land is now fenced in and divided into fields, and comfortable habitations erected for himself, his family, and his cattle, at a cost probably not exceeding half what an ordinary landlord would have paid for similar improvements on a similar holding. The other man I refer to has migrated from Manchester to Cottenham, in Cambridgeshire, where he has purchased 20 acres of land, on which he is quite as likely to succeed in his enterprise as though he had sailed to the other side of the globe.

Mr. A. Pell, one of the Directors of the Company, speaking recently in Cambridgeshire to the men of Cottenham, told them that if they would work as hard for themselves in their own parish as they would be forced to work if they emigrated to foreign lands, their chance of success would be greater in Cottenham than it would be in America. And this he said in the full recollection of his visit as one of the Royal Commissioners, in 1879, to the virgin prairie lands beyond the great river Mississippi. The working men of the present day have this great advantage, that the fall in the value of land, while it has brought ruin to the landlords and to the tenant farmers, has placed it within reach of their own class. And if labourers find in the present crisis a tide in their affairs which, "taken at the flood, leads on to fortune," all other classes will rejoice that upon the class on whose labours we are all dependent there has dawned a hopeful ray of coming light to cheer them amid the surrounding gloom. WANTAGE.

THE MIR AND THE POLICE.

As soon as the Russian Government had earnestly set its mind to emancipate the serfs, the great question had to be faced, how to manage and keep in order those millions of newly made citizens; and in the first instance how to make them pay the redemption money to their seigneurs and the ordinary taxes due to the State. The bureaucratic commission appointed for the settlement of the great emancipation problem decided at first, with true bureaucratic foresight and profundity, that the former seigneurs of the serfs should be entrusted with all administrative and judicial functions in the rural districts as well as with the entire control of the police. This would have been in itself a restoration, in another form, of serfdom, thus making the emancipation a farce, which would have been all the more dangerous because there were only too many other points in which bitter disappointment on the part of the people was to be anticipated. But the Government gave ear to the wiser counsels of the local committees and the press, which pointed to the village commune as an institution natural and long established throughout the country. Accordingly the village commune was preserved, and the open-air meeting of all the peasants, the *Mir*, was acknowledged as the chief authority, both in the village commune and in the rural *volost*, or district, an administrative unit comprising several village communes. But here most puzzling questions of detail presented themselves to the minds of the St. Petersburg legislators. Notwithstanding the benevolent regard for the peasants which prevailed in the highest governmental spheres, they could not admit the notion of leaving the Mir just as they found it. It was more than the most robust bureaucratical mind could digest. How to reconcile the *Mir* with the *tchin?*—that was the problem. It was as if two cultures, two different worlds, or rather two different types of human nature, as strongly individualised as they were antipathetic, had suddenly come face to face. What is a *tchin?* Perhaps this institution is most easily described in the person of its presiding genius the *tchinovnik*. The *tchinovnik* is a being convinced that, were it not for his "prescriptions," his "instructions," and his "enjoinments," the world would go all askew, and the people would begin all at once to drink ink instead of water, to put their breeches on their heads instead of their legs, and to commit all sorts of incongruities. As he passes his whole life, from his earliest youth, in musty offices, amidst heaps of scribbled papers, completely out of touch with real life, the *tchinovnik* understands nothing, has faith in nothing, but these same scribbled papers. He is as desperately sceptical about human nature as a monk, and does not trust a whit to men's virtue, honesty, or truthfulness. There is nothing in the world which can be relied

upon but scribbled papers, and he is their exponent. Such an institution as the *Mir*—a self-governing collective authority, with no trace of hierarchy or distinction of classes, an authority with an almost unlimited sphere of action, and which at the same time kept no record of its proceedings, putting its trust only in the good faith and the collective conscience and wisdom of the community—must have appeared to the mind of a *tchinovnik* not only incoherent and incomprehensible, but almost contrary to the laws of nature. Manifestly it was his most sacred duty to bring order into this chaos.

Every Russian village commune elects its own elder or mayor, who is spokesman and delegate of the commune before the authorities. In the village itself the elder is neither the chief nor even the *primus inter pares*, but simply the trusted servant of the *Mir*. The *Mir* discusses and regulates everything coming within its sphere of action, leaving hardly anything to the discrimination and judgment of its executive agent. So simple and subordinate are the elder's duties, that each peasant, provided he is not a drunkard or a thief, can fill the post. In many villages, in order to avoid discussions, the office of elder is filled in turn by all the members of the *Mir*. As the eldership puts the peasant in frequent, almost everyday, contact with the administration, thus involving him in no end of trouble and annoyance, the peasant shows very little ambition to obtain this office. Much persuasion, sometimes scolding and bullying, are necessary to force this honour upon an honest peasant who has not in view the feathering of his nest at the expense of the commune. Some writers—Mr. Mackenzie Wallace among them—in describing the Russian village life wonder at this strange lack of political ambition in our peasantry. We at home think it only too natural; our *moujiks* have not studied the history of Rome, Athens, and other republics, nor do they so much as suspect the existence of great municipalities such as those of London, Paris, or New York. Their obsequious imagination does not suggest to them any flattering analogies, and they cannot see that the proffered dignity is anything but a double servitude—to the *Mir* on the one hand, and to the administration on the other, with no room whatever for the proud self-assertion which is the charm of office for more ambitious souls. The office of elder appears to them a burden and a public labour, differing from those of mending the roads, digging wells, or transporting government freights only in being more trying and troublesome. Now, in modifying the system of rural self-government, the St. Petersburg *tchinovniks* had the inspiration of transforming this very modest and humble village elder into a diminutive *tchinovnik*, created in their own image and likeness. The task was not without its difficulties. The elder, as a rule, was deficient in the most essential qualification for his profession—he could not even write or read; he was totally illiterate. It was necessary therefore to provide him with

a secretary, who had to undertake all the correspondence, his chief merely affixing his seal or his cross. This important person—the clerk—was a perfect stranger to the village, a man picked up from the street. As the law must needs give him extensive powers, it was all the more necessary to make him easily controllable. Our legislators were quite equal to the task; they blessed the villages with a system of chancery proceedings which would do honour to much bigger places. To give an idea of the system, suffice it to say that the clerk of the *volost* is bound to keep in his office no less than fifty-four different register books for recording the fifty-four different papers he has to issue daily throughout the year. In somewhat bigger *volosts* one man cannot suffice for the task, and the peasants are compelled to maintain two or even three clerks. Need it be added that such a complication of chancery business could in no way keep in check an adroit clerk, or prevent him from abusing his power; rather the reverse. The figure which the *pissar* or clerk cuts in the history of our new rural self-government is a most unseemly one. In its early period it was decidedly the blackest spot in the whole system, and the Government has undoubtedly contributed to make the *pissar* as disreputable a character as possible, by expressly prohibiting, out of fear of revolution, the employment on this duty of men of good education. All those who have completed their studies at the gymnasiums (colleges), much more those who have been in high schools, were excluded from this office. Only the more ignorant —those who have been turned out of the colleges, or have never gone further than the primary schools, were trusted to approach the peasantry at such close quarters. Being generally self-seeking and not particularly high-minded people, they turned easily to their advantage the peculiar position in which they were placed. The *pissar*, the interpreter of the "law," and generally the one not wholly illiterate man in the rural administration, could practically do whatever he chose. The elder, his nominal chief, in whom the word "law" inspired the same panic as in every other peasant, and who was quite bewildered by the bureaucratical complication of his administrative duties, was totally helpless in the *pissar's* hands.

But the elders could find ample consolation for this sort of involuntary dependence in the consciousness of the power granted to them over the rest of their fellow villagers. At present they are chiefs and, in the Russian sense of the word, masters, into the bargain. The elder of either category received the right of fining up to one rouble at a time, imprisoning, or imposing compulsory labour, up to two days at a time, on every member of his commune or *volost*. These penalties are inflicted, at their own discretion, and without appeal, for any word or act they may consider offensive to their dignity; indeed, in some instances it has been enough to be convicted of neglecting to uncover the head in their presence. Nor are the elders' rights to be trifled with in their relations with the

Mir as a whole. They are invested with the exclusive right of convening meetings of the commune or the *volost*. A meeting held without their authorisation is declared illegal, its resolutions void, and its conveners amenable to severe penalties. In withdrawing from the meeting, the elder can break it up, whenever he thinks that the debates are taking an unlawful direction. Thus the elected elder, when once confirmed in his office, becomes for all practical purposes the master of the body which elected him. A strange sort of self-government, certainly, though by no means an exceptional one in an autocracy. The self-government granted to our provinces in 1864, and to our towns in 1871, is modelled exactly on the same pattern: in each the chairman has more power than the body he presides over, an arrangement which has, as is well known, deprived both provincial and municipal self-government of all vitality.

It is interesting to observe that in the villages the same trick produced no such effect. Here the legislature found within the masses an ancient habit of collective communal life and self-government which no *ukaz* could root out. True, in the last twenty years great corruption has appeared in the village self-government also; but this has been due to the interior economical decomposition of the village commune itself, which has divided the village into two camps, the one of the rich, the other of the poor. The machinery of the law has evolved various anti-social elements, but it is not their direct cause. So long as the process of the economical disintegration of the peasantry is in its latent period, the bureaucratical prescriptions of the law remain a dead letter. The *Mir* keeps to the traditional forms of self-government; the elders, who are imbued with these traditions, just as much as the other peasants, never think of making use of the strange powers given to them by the law; they remain in the subordinate and modest position assigned to them by the customary law; and they are the "*Mir's* men," to use the people's expression.

It has fared much worse with the other series of manipulations of rural self-government, which makes the natural supplement of those just spoken of. The village administration has to be subordinated to the whole of the administrative machine of the State. After having created in the midst of the formerly democratic villages a sort of *tchin*, it was necessary to find another *tchin* to whom to subject the newly-created one. The Government, in the honeymoon of Liberalism, acted with some sense and discretion in trusting this function to the *Mediators*, officers appointed conjointly by the nomination of the Ministry and the election of the citizens. These *Mediators*, elected from among the Liberal and really well-intentioned part of the nobility, exercised their authority with moderation and wisdom, not so much for the control of the *Mir*, which was perfectly equal to its task, but to protect it from the abuses and malversations of the local police and administration. Since 1863, the year of the Polish insur-

rection, which marks the point at which the Government embraced reaction, the state of things has changed considerably. At that period the Government threw all the weight of its authority into the balance of the party of the "planters," as the obdurate defenders of the maintenance of serfdom were christened in 1861. The whole administration changed colour, and since that time Russia has frequently seen *Mediators* who used their power for compelling the peasants to do gratuitously all sorts of work on their estates, who publicly flogged the elders, and who mocked the law which exempted them from corporal punishment, by degrading them before the flogging, and restoring them the attributes of their dignity when the flogging was over. The regular enslavement of the *Mir* began, however, a few years later. From 1868 up to 1874, when the office of the *Mediators* was entirely suppressed, the *Mir* gradually passed under the supreme command of the *ispravniks*, or superintendents of local police. The peasants' bitterest enemy could not have made a worse choice.

A police officer—we are speaking now of the common police, charged with the general maintenance of order and the hunting down of common offenders—is a *tchin* in the administrative hierarchy, like all the others; but between him and the paper-scribbling *tchin* of the numberless offices there is as much difference as between a decent, peaceful Chinese votary, who owns subjection to his ten thousand commandments, and a brutal and fierce Mogul of Jenghiz, though both have beardless faces and oblique eyes. With the police *tchin* the instrument of command is not the pen, but the rod. As regards the people's property, the *tchins* of all denominations have the same somewhat strange ideas. But whilst the *tchin* of the bureau cheats and swindles, the police *tchin* practises wholesale robbery and violence like an Oriental pasha. In dealing with the *moujiks* of the villages, who will suffer to the utmost of their phenomenal patience before "going to law," the police can indulge in anything short of open homicide. The function of tax-collectors alone, entrusted to them after the emancipation, offered a vast field for that interference, abuse, and oppression, of which the early *Zemstvos* so often complain. When the *ispravniks* were charged with the control of the whole rural administration, and could at their pleasure indict, and fine or imprison, by way of disciplinary punishment, both the district and communal elders, the peasants' self-government as such was practically abolished, it could exist only as far, and in so much as the police chose to tolerate it. "The *ispravniks*, thanks to the power they have received, have transformed the elected officers of the rural self-government (the elders) into their submissive servants, who are more dependent on them than even the soldiers of the police-stations." The above is the statement of the most competent authorities on the subject, the members of the *Zemstvos* (*Russian Courier*, November 8th, 1884). The village communes soon became for the country police a

source of permanent income, levied often in a way which reminds us forcibly of the good old times of serfdom. Thus, in the circular of the Minister of the Interior, of March 29th, 1880, we find the admission that, "according to the reports accumulated in the offices of the Ministry," the country police officers, profiting by their right of having *one* orderly to run their errands, were in the habit of taking from the communes under their command up to forty and fifty such orderlies, *whom they used for their house and field labour.* Sometimes the communes, instead of this tribute of gratuitous labour, paid a regular tribute of money (called "obrok" by former serfs), amounting in some provinces—according to the same authority—to from 40,000 to 60,000 roubles per province.

A *Mir* which could be subject to such tyranny, which could have elders imposed upon it who were notorious thieves and swindlers, as was too often the case, such a *Mir* had only the shadow of self-government. Yet the peasants had a refuge still in their homes. The *ispravniks*, and even the *stanovois*, were persons too great and too distant to interfere with the private affairs of the peasantry. But the time was at hand when the police intruded even into this last refuge.

When in the years 1875-6 the Nihilist rebellion burst forth, it assumed at first the aspect of a vast agrarian agitation in favour of the restitution of the land to its tillers. As the same aspirations, though obscured by the mist of monarchical superstitions, were smouldering among the whole of our agricultural class, the Government took alarm. Fierce Nihilist hunting began at once throughout all Russia. The peasants did not rise in arms at the voice of the agitators, perplexed and bewildered as they were by the unheard of appeal to arms; but in the relentless chase after the Nihilists they kept aloof, and often assisted the propagandists to escape from the hands of their persecutors. The active part in the affair was played by the local officers of the State police, the *stanovois* and *ispravniks*, and the volunteer spies, belonging to the newly born class of rural usurers, plunderers of the people, and upstarts, who were only too ready to fish in troubled waters. But in a well-regulated autocracy nothing can be left to private initiative, least of all the spy's craft. As to the local agents of the State police they were overcharged with so many other duties, and had under their superintendence districts so vast, as to render an effective and minute survey on their part impossible. In 1878 the rural constabulary was created and the Russian peasant's Babylonian captivity to the police began.

Functionaries called *ooriadniks* were instituted for strengthening the rural police, headed by the *ispravniks* and their assistants the *stanovois*. The *ooriadniks* are under the command of these officers, in their quality of agents of general police. But like the gendarmerie created by the Emperor Nicolas I., for the benefit of the townspeople, the rural gendarmerie is placed in a peculiar position. The *ooriadniks*

duties are extensive and manifold. They may be called the masters of the village communes in the same sense as the governors are called the masters of their respective provinces. In addition to the functions of chiefs of the communal police, they unite in their persons those of sanitary inspectors, inspectors of roads and buildings, statistical agents, &c. They must needs interfere in everything, prying into private households, and enforcing various regulations which the active bureaucratical imagination has invented for the benefit of the *moujik*. Thus, they must see the peasant's house ventilated and the windows opened, even during the winter time when people have hardly fuel for keeping the hard frost outside the door. To maintain the purity of the air they must prevent the keeping of manure in open courts near the houses—whilst in the whole of Russia no peasant, save the few German colonists, has an artificial dung-pit. The same solicitude for the stupid *moujik* who cannot feel the disadvantage of keeping his cattle in his dwelling, inspired them to forbid that bad practice, though the young cattle would be frozen otherwise in the courts, as the peasants have no warm stables. Neither is the exterior of the village neglected, for the *ooriadnik* must see the street kept clean, though in the villages there is no trace of pavement, and the streets during the spring and the autumn, that is to say for six months in the year, are knee-deep in mud. There are many other equally benevolent but impracticable ordinances which show their utter disregard or ignorance of the conditions with which they have to deal. The more absurd the order is, the easier it is for an *ooriadnik* to convert it into a means of extortion and a source of abuse, owing to the monstrous powers with which he is armed in his capacity of political blood-hound.

Only a despotic government, fully conscious of its many sins, could, in a fit of well-grounded fear, put such powers into the hands of its inferior agents. They can enter at any time of the day or the night anybody's house, examine everything, and question everybody as to any actions and intentions which they may consider suspicious. They have the right of taking into custody any citizen in the district at their own discretion, without obtaining any special warrant or authorisation, while the elders and the communal police are bound to arrest and carry off the prisoners at the *ooriadnik's* bidding.

Now let us ask, What are the moral and intellectual guarantees offered by these people entrusted with powers so extensive over the liberty, the honour, and the property of their fellow-citizens? Whence is this horde of village proconsuls picked up? An *ooriadnik* receives a salary of £20 a year, which would represent £40 at the English value of money. We could not therefore expect to see among them well-educated people, even were the aversion of all decent people to enter the police force less than it is. Moreover, the considerable amount of physical exertion required from the *ooriadnik* excludes the petty *tchinornik* as a rule. But as the *ooriadnik's*

duties imply a considerable amount of judicial chicanery, they cannot be recruited at random among simple people, such as the retired soldiers or non-commissioned officers. As a matter of fact they are recruited chiefly from among the dregs of the officialdom of the towns and the outcasts of the intellectual professions, and are in some instances scribes out of employment, in others petty police officers turned out of their posts for bribery, drunkenness, or other offences. And yet the Government of the Tsar exempted this rabble in a totally exceptional manner from any control whatsoever. The Russian press is not allowed, as it is well known, to indulge overmuch in exposing the abuses and misdeeds of any of the members of the official hierarchy. But to attack a gendarme, a political spy, or any officer connected with the self-defence of the Autocracy against its interior enemies, is considered almost as a personal insult to the Autocrat. The *ooriadniks* in their capacity of rural gendarmes were granted the same immunity; the press was strictly prohibited from publishing any exposure of their abuses. This fact, however strange it may seem, was publicly revealed three years later by several Russian papers.

In the *Zemstro* newspaper of December 31st, 1880, the following details were explicitly stated by the responsible editors: "At the institution of the *ooriadniks* all possible care was taken to present them in the most favourable light to public opinion. To this end the *Official Messenger*, and the official papers existing in every province, published by the orders of the minister a number of reports of their activity, shaped sometimes in the form of epic narratives, sometimes in the form of statistical tables. Whilst, on the other hand, soon after the law of June 9th, 1878 (instituting the *ooriadniks*), came into force, namely, in September of the same year, the editors of all the newspapers and periodicals were ordered not to allow in their respective papers any censure of the activity of the police, nor to discredit that body by exposing any of its abuses; in case of any transgression of this order the delinquents were threatened with the utmost rigour of the law. Thus the *ooriadniks* became quite inviolable persons for the press."

It may be added that the Government had to defend these its Benjamins, charged with protecting it against the agrarian revolution, even against their immediate chiefs, in hierarchical order, the *stanovois* and *ispravniks*. When the herd of these 5,754 brutal invaders, scattered in the villages, began their career, even the not particularly law-abiding gentlemen of the police felt that the Government had overshot the mark. Numbers of *ooriadniks* were turned out, or at least driven from one district to another, by way of disciplinary punishment. In order to suppress this flagrant proof of their worthlessness, the Ministry of the Interior, headed by General Makoff, expressed a significant disapprobation of their conduct to the police authorities when-

ever there had been frequent expulsions "as likely to diminish the prestige of the *ooriadniks* with the peasantry." No wonder that the *ooriadniks* became so full of their self-importance that in the Province of Poltava, when one of them was fined eleven roubles by the magistrate, he flew into such a passion as to inveigh against the magistrate in court, and threaten him with a "protocol."

We have dwelt on these details, at the risk of tiring our readers, because they prove to demonstration the fallacy of a very common prejudice concerning the Russian Government. It is supposed that the educated class only are subjected to police tyranny. This is not the case. Our Government is free from any taint of partiality. Whenever it scents some danger to its own skin, all its "dear children" are dealt with in exactly the same way.

The quite anomalous position created for these guardians of the public safety could have only one consequence. The *ooriadniks* have become the scourge of our villages, the terror of the peasants, and the perpetrators of violence and extortion unheard of before. "Being perfect strangers to the village," says the *Zemstro* newspaper, "they despise the peasantry, as all upstarts do. They look on the rustics subjected to their superintendence as invaders do on conquered people, in dealing with whom everything is allowable. The extortions of the *ooriadniks* can only be compared to military contributions in time of war. Not only are private individuals compelled to propitiate the *ooriadniks* with bribes, but whole communes are saddled with illegal tribute. And such things happen, not in the remote corners of our vast Empire, but in the neighbourhood of St. Petersburg." In view of these experiences, the *Zemstvos* have repeatedly petitioned for the abolition of the *ooriadniks*. In the sitting of 17th January, 1881, of the St. Petersburg *Zemstvos*, the deputies expressed their opinion in no measured terms. The magistrates Volsoff and Shakeef complained that the *ooriadniks* were simply a curse to the people, and that it was impossible to expect any good from them, since they were recruited chiefly from almost illiterate clerks out of employment, who had no conception of their duty. Baron Korf said that he doubted whether, among those present, there was a man capable of speaking a word about the good done by the *ooriadniks*, whilst it would be easy to speak of the harm they had done until the following morning. In the short Liberal respite of 1881 there was hardly one periodical—save the *Moscow Gazette* of M. Katkoff—which did not put before its readers a mass of accumulated facts concerning the exploits of the *ooriadniks*, which abounded in instances of every kind of malpractice, from petty personal annoyance to the most heinous offences.

We will open first a page in the administrative career of a certain Makoorine, *ooriadnik* of the Samora province, a jolly fellow, though somewhat excitable and rough when in his cups. One fine morning

in the autumn of 1881 he arrived at the village of Vorony Kust, where it happened a meeting was being held in the Communal house. Here he met with various friends, and among them Chaibool the Rich, a Tartar peasant. Having some business transactions with the *ooriadnik*, Chaibool invited him, together with several mutual acquaintances, to take a drink at his house. The meeting over, they left the house in several cars; but in opening the gate of the house they let out a pig; the animal took it in its head to run after the *ooriadnik*, though Chaibool "tried several times to shout it back." They crossed the village and reached the fields, the pig still running after the *ooriadnik's* car with the evident intention of escorting him up to the house of his host. The rural administrator took this conduct as a malicious insult to his dignity on the part of the pig, and shot it dead. After being hospitably entertained by Chaibool the Rich they returned to the village a little elevated. Here they met with the publican, to whom the pig belonged, and who asked the *ooriadnik* to pay for the animal. At such audacity Makoorine lost his temper, and declared that he, the *ooriadnik*, had the right to shoot not only pigs but men too if he thought fit, in accordance with the law. A retired soldier, John Kirilow, who was present, observed that he had also served the Tsar, but never heard of such a law. Without any further argument the *ooriadnik* flew on Kirilow, knocked him down, dragged him into the court, and, calling to his assistance his coachman, beat him once more. This guardian of public order was condemned to six weeks' imprisonment; but as it was discovered that there were pending against him no less than *fifteen* similar suits he was put under police supervision pending the verdict on his cumulative offences. Again, the *ooriadnik* of Malo-Archangelsk arrived in the village in carnival time perfectly drunk, and, entering the Communal house, behaved with gross impropriety, not only using the most fearful language to the members, but cutting the tablecloth to shreds with his sabre. When some peasants tried to calm him, he flew on them, brandishing his sabre, and drove them one and all out of the house.

In Jvanovka the *ooriadnik* on entering the house of a peasant "in order to see that it was properly clean," observed in the kitchen a young calf tied to the leg of a table. At such slovenliness the *ooriadnik* lost his temper, and, after having reviled to the best of his ability the women who were spinning in the other room, drew his sabre and cut the calf to pieces.

In Poroobejka an *ooriadnik* came upon a woman making dough. She was in a hurry to make the bread for her family, and had left the floor unswept. Exasperated by this negligence, the *ooriadnik*, after giving the woman a severe scolding, overturned the kneaded dough before the woman's face and spilled it on the dirty floor.

In Dmitrovka the *ooriadnik* Lastochkin met a wedding procession

going on its way singing, according to custom, from the house of one relative of the married couple to another. He ordered them to disperse at once, though the elder of the village was among them. One of the guests, Basily Kareff, remonstrated against such interference, explaining that they were celebrating a wedding. The *ooriadnik* in reply struck Kareff twice with his whip. Thereupon the crowd became excited, and, setting upon the *ooriadnik*, began to handle him roughly. He would have fared, perhaps, worse had he not taken refuge in the house of the parson. On hearing of the affair the whole village came together, clamouring that the *ooriadnik* should be delivered up to them. It was only through the soothing influence of the parson that the *ooriadnik* escaped lynching. A protocol was drawn up of the "insult suffered by the *ooriadnik*," and Kareff was condemned to seven days' imprisonment.

All these facts, given by eyewitnesses to a correspondent of the *Zemstro* newspaper, refer to one small district. None of these incidents has of itself any particular importance. But they have much *couleur locale*, and convey a pretty fair idea of the moral physiognomy and distinctive attributes of the new type of our village administrators.

In one place the *ooriadnik* fired on a crowd of unarmed people; in another he charged on horseback with sword and whip a crowd busy in quenching a fire; in a third he demolished a peasant's freshly-built house, under the pretext that it was constructed "not according to the plan;" in a fourth he assaulted and inflicted severe bodily injuries on the churchwarden for not having appeared speedily enough before him when sent for.

In the Mogilev district of the Podol province, Daniel Yasitsky, the *ooriadnik* of the village of Chemeris, after having for a long time distinguished himself with impunity by extortions from innocent people and blackmail from thieves caught in the act, whom he was in the habit of setting free by his own authority, indulged in the following practical joke: by threats and blows he compelled two of his subordinates, peasants, "decurions," to harness themselves in a car and drag him to the town of Bar, distant about four miles. Yasitsky was simply dismissed.

Another still more revolting case was tried before the St. Petersburg tribunal, April 23rd, 1886. Herassimoff, the *ooriadnik* of a village called Borki, in the Peterhoff district, was convicted of having put to the torture several peasants, in order to extort confessions about a robbery committed by unknown persons. The peasant Marakine and the two brothers Antonoff were all three kept hanging for several hours on a sort of improvised strappado. They were stripped of their clothes and their hands tied behind their backs by a rope, which was then passed over a rail fixed high in the wall of an ice-cellar. The bodies of the unfortunate men were then raised over the ground, so that they could hardly touch the icy ground with the tips

of their toes. The *ooriadnik* appeared now and then, asking for their confessions, and giving them blows on the head, as they refused to comply with his wishes. One of the three victims, the peasant Marakine, on the way to the torture-chamber was subjected to no less infamous treatment. The testimony of the elder of the village is particularly noteworthy. "Herassimoff (the *ooriadnik*) came to me and asked whether I could lend him thirty men. 'Why do you require so many?' I asked. 'In order,' said he, pointing to Marakine, 'that I may make this fellow run the gauntlet.'" The witness answered that he would never permit such things to be done with the peasants of his commune; whereupon Marakine had his hands and legs tied, and was fastened by the legs to the back of the car, while his body was allowed to drag upon the ground. The horse was made to run, and Marakine was dragged in the mud for about ten yards. Then Herassimoff said to the elder, "Bring me some straw, burn him a little." But witness refused to bring it to him.

Herassimoff was found guilty, and condemned to one year's penal servitude, so lenient is the Russian law towards crimes *against* humanity, reserving its severity for those who are working *for* humanity.

Such barbarities, which would have set on fire European diplomacy had they been committed by a Turkish officer, are of course exceptional, though it would be wrong to suppose them unique. From the opposite end of the Empire we hear of things which are not better, but if anything worse. It was proved by judicial inquiry before the Kisheneff tribunal, that in the Orgheef district the *ooriadniks* and the communal authorities had used for a long time various instruments of torture, one of which, called *bootook*, figured on the table of "material evidences" in the court. It is a wooden instrument composed of two sliding beams, which serve for screwing between them the feet of the culprit. These abominations were not unknown to the police; but the thing was brought before the tribunal only because the authorities arrested the wrong man, on whom they used the *bootook* with such zeal as to make him a cripple.

If this catalogue of horrors has been somewhat long, it is yet by no means complete. We have spared our readers any reference to outrages of a still more revolting kind, the outrages of the police upon women. It may be said with bitter truth that all classes are treated alike in Russia. The despotism which presses so heavily on the life of the educated Russian is no kinder to the simple peasant. It was justly observed that the peasants were freed from the lordship of the nobility only to be given in serfdom to the administration and the police; for indeed no milder term can give an adequate idea of the relations that subsist between the governed and those who govern in the rural districts of Russia.

STEPNIAK.

INFECTION AND DISINFECTION.

The enormous variety of subjects contained in medical literature necessitates the use of a corresponding number of terms, the majority of which have a certain and well-known meaning, but it would be difficult to find two words more wanting in the element of precision and more loosely used than those placed at the head of this article. The general public, indeed, solve all difficulties by connecting with the word infection the idea of something "catching," *i.e.* something that can be propagated from one person to another, and disinfection is correspondingly regarded as the means whereby such propagation can be hindered. It must be admitted that this simple view is quite correct so far as it goes. It of course disregards all questions as to the nature of infection, and the reason why some diseases spread from person to person and others do not, and it accepts without doubt the belief that disinfection is generally attainable, and by comparatively simple means. In cases especially where the use of some well-advertised material is found to neutralise or mask an unpleasant odour, the completeness of the disinfection is looked upon as absolutely certain.

In medical writings the confusion has been still further increased by the use of the words "contagion" and "contagious" in describing those diseases which were considered to spread from one person to another by contact. "Infection" and "infectious" were limited to the cases in which the poison of the disease was supposed to be conveyed by the atmosphere from the sick person to those at a greater or less distance from him. Accordingly, we used to hear of a disease being contagious but not infectious, and *vice versâ*. The distinction is, however, a purely artificial one, and is not sustained by facts, for many of the contagious diseases can be propagated indirectly, that is, without actual contact between the person who yields the poison and the person who receives it. Take, for example, diphtheria: it assuredly spreads by contact, and is therefore contagious, and no less positively is the poison capable of being disseminated through the atmosphere and infecting those who inhale it. So, too, with small-pox. If its virus be introduced under the skin of a person unprotected by vaccination or a previous attack, he will almost certainly suffer from the disease, and the same result would follow were such a person to be in close attendance upon a small-pox patient. In the latter case, the poison floating about in the atmosphere would get into the system through the lungs, and this is practically just as much an example of *contact* as if the poison were artificially introduced

through the skin. It is therefore better to consider the terms "infection" and "contagion" as practically synonymous, and they will be so used in the remarks that follow.

To show what is implied by an infectious disease, let me take a typical example and contrast it with another disorder well known to be non-infectious. A young adult, previously in good health, is suddenly attacked by such symptoms as chilliness, soreness of throat, and evidences of derangement of the stomach. There is nothing characteristic about these symptoms, but let us suppose that on the following day there is high fever, dryness of skin, headache, giddiness, &c., and that in a few hours a scarlet rash appears, first on the chest and then spreads over the body. All the symptoms become worse, and for ten or twelve days the patient is very ill. After this period, in favourable cases, a change takes place for the better, the rash dies away and all the other symptoms gradually subside. In from four to six weeks, supposing that there are no complications, the patient regards himself as well. Such, in a few words, is the course of a mild case of scarlet fever, which may be considered as a typically infectious disease. Now suppose that our patient is treated in a house where there are several other young people who have never suffered from the disease. We know from experience that unless the most minute precautions are taken, the majority of these persons will exhibit similar symptoms. It is also well known that if any of these patients, supposed to have partially recovered from the disease, change their place of abode and go among other friends, the latter will run great risk of being attacked, and that the disease may thus spread *ad infinitum*. This capacity of propagation, the possession of which is as certain as anything can possibly be, suggests the inquiry as to the manner in which the original patient of our series became infected. He in his turn must have taken the disease from someone else, but it is quite possible that he has never been within a mile of a scarlet fever patient. In many such instances it is impossible to get any clue to the original case, but it sometimes happens that evidence is forthcoming to the effect that days or weeks, or even months before, a person convalescent from the disease has occupied a room of which our patient was afterwards a tenant, or that some article of clothing which once belonged to patient number one has been handled or worn by the person whose case we are considering. It is evident that there must often be great difficulties in prosecuting such an inquiry.

Let us now take an example of a non-infectious disease, and notice how it contrasts with the one we have just described. A young adult, previously in good health, becomes sensible of a feeling of heat alternating with chilliness and perhaps shivering, and slight pains in the limbs. In a day or two there is more or less fever and

thirst, and some of the larger joints are swollen and very painful, while the skin covering them is much reddened. The pain and fever are the principal symptoms, but there are often others, a description of which is unnecessary for our present purpose. The complaint lasts an indefinite time, but even in the absence of treatment usually subsides within six weeks. Such, in a very few words, is the course of rheumatic fever or acute rheumatism.

These two diseases, scarlet fever and rheumatic fever, have much in common, but there are sharp points of difference between them. In both fever is a prominent symptom, and in addition to the display of local symptoms the whole system is evidently affected. The differences, however, are still more important. Scarlet fever is eminently infectious. The air which surrounds the patient becomes contaminated and highly charged with the poison, and persons breathing it run great risk of becoming affected. In a case of rheumatic fever, although the secretion from the skin is generally very copious and peculiar in character, so that the sense of smell is strongly appealed to, there is no such risk; the disease cannot be conveyed from the patient to those around him, however close the attendance and however defective the ventilation of the room. Infection from a previous case is therefore never thought of in connection with rheumatic fever, though the actual nature of the poison which causes the disease is as yet unknown. The attack is often excited by exposure to cold and wet, circumstances which play no part in the causation of scarlet fever. There is at least one more important difference between the two diseases: scarlet fever very rarely indeed occurs a second time in the same patient, and the symptoms never become chronic; rheumatic fever, on the other hand, is very prone to recur, and in not a few cases the original attack merges into a chronic state of suffering, which may continue for months or even years.

I have taken scarlet fever as a representative of the class of infectious diseases the cause of which is the contamination of the system by some specific poison, and I have sketched in a few words the main symptoms which result. For our present purposes the important points are the contagious or infectious character of the disease, and the proofs that the contagious material multiplies within the system which it has invaded, and from which it sallies forth in quest of other victims. There are, unfortunately, not a few diseases belonging to the same category as scarlet fever, the principal being small-pox, measles, typhus, influenza, whooping-cough, diphtheria, typhoid, and cholera. With regard to all these it may be stated that they are all separate and distinct as regards causation. A case of scarlet fever never gives rise to small-pox in those exposed to infection, neither does any one of the above diseases ever pass into another. There are other subordinate distinctions: the poison of

scarlet fever, contained presumably in detached particles of skin, clings for months to articles of clothing, especially woollen ones; that of small-pox may be collected from the eruption and preserved for years between pieces of glass; that of typhus is easily rendered innocuous by free ventilation. All these peculiarities—and many more might be cited—point to important differences in the nature of the infectious materials.

What this infectious material really is has often been keenly debated since medicine became a science, and at the present time is the question which most closely occupies the minds of medical investigators. Merely to enumerate the inquiries and to describe the experiments and the theories based thereon would fill a volume; but it is not to be wondered at that this subject should have excited so much attention when we reflect upon the prevalence and fatality of the diseases in question, and upon the comparatively slight influence which treatment exercises upon their course. On the other hand, experience clearly shows that their prevention is not only possible, but in some cases easily accomplished. The knowledge of the causes of these diseases would indicate the proper preventive measures, or at any rate the direction which such measures should take, and hence a discovery of the cause in any given case at once yields practical results. When we know what causes infection we can apply disinfection with every prospect of success. Without such knowledge success if attained must be accidental rather than otherwise. The nature of the contagious agencies and the medium through which they spread are the most important points in connection with the subject of infection.

There is strong evidence in support of the view that these contagia are actual living things. Formerly the opinion was universally held that infectious diseases were caused by foul air, and the effluvia connected with putrid decomposition were regarded as a sufficient cause for the development of fever, small-pox, &c. It cannot be denied that gaseous matters, notably sulphuretted hydrogen, may act as poisons and cause many serious symptoms, but it has never been shown that infectious diseases originate in this manner. It is contrary to all that chemistry teaches us that sulphuretted hydrogen or ammoniacal vapours inhaled by the lungs should increase within the body and cause it to become a centre of infection; and we know likewise that ordinary poisons, *e.g.* arsenic or morphia, fatal as their effects may be to one individual, have no power of increase and propagation after being once taken. It is therefore evident that the poisons of infectious diseases must be something of an entirely different nature. We know that they multiply in the system to an almost infinite extent, and that every one of the myriads of atoms thus developed is as potent for evil as the atom from which it origi-

nated. The possession of this and other properties clearly indicates that the contagious agencies are independent living organisms capable of growth and reproduction. It has long been known that certain diseases of the skin—*e.g.* ringworm—are caused by the presence of parasites which very rapidly increase, and can be easily recognised under the microscope.

In the case of some three or four of the infectious diseases it would seem that the poison has really been discovered. On examining vaccine matter, the contents of the pocks in small-pox, and discharges in glanders, the microscope shows a vast number of infinitely minute particles, which appear as glistening points. Some of these are even less than the fifty-thousandth of an inch in diameter, and it therefore follows that very high powers are necessary for their detection. Such particles, obtained from vaccine lymph, have been washed in water; the water when inoculated did not produce any effect, but the washed particles were found to have retained their potency. It seems fair to infer that the contagious agents of the other infective diseases would resemble in their physical characters that of vaccine, and the nature of such particles is the important problem that offers itself for solution. They are supposed by some, and notably by Dr. Beale, to be of an animal origin, and to consist of elementary living matter, termed *bioplasm*. Such particles may be easily transferred from an infected to an uninfected organism, in which they will manifest their own specific powers, and grow and multiply almost indefinitely, exciting in their new home a series of changes resembling those which characterised their presence in the one from which they were derived. This account is certainly correct as regards the virus of vaccine, but it does not precisely define the nature of the particles or tell us anything of their origin. Dr. Beale, however, states that particles of contagious bioplasm are not generated in the organism of the infected animal, but are introduced from without, and were originally derived by direct descent from the bioplasm of the body of man or animal. He regards them in fact as particles of degraded bioplasm. This theory is not in favour, or rather is not fashionable, at the present time. One objection to its validity is constituted by the fact that particles of living animal matter die very rapidly after they have escaped from the body, whereas many contagious germs preserve their vitality and capacity for evil for a very long time.

Another theory which was promulgated some twenty years ago was to the effect that the contagious particles are of the nature of those low vegetable organisms which are termed *fungi*. This view gains support from the manner in which these bodies increase in number when planted in a suitable soil, and the power which they possess of decomposing many organic substances. The fact, already

referred to, that several diseases of the skin and hair in men and animals are undoubtedly due to fungi, also tends to recommend this theory. Recent experiments, however, have shown that these organisms, capable as some of them are of growth and development on the *surface* of the body, do not possess the power of growth and reproduction *within* the body, and it is therefore unlikely that they should be the causes of disease in which the system is charged with poisonous materials.

A third theory is one which is extremely popular at the present day, advocated as it is by investigators of the highest repute. It is almost needless to say that I refer to the view which credits certain minute organisms, termed *bacteria*, with the power of causing the infectious diseases—that is, with being in themselves the poisonous agents. So firm is the hold that this view has obtained that "disease-germs" and "bacteria" are used as though they were synonymous terms. It is, moreover, probable that more experiments have been made with reference to bacteria than on any other subject whatever.

The term "bacterium" signifies a rod, and many of these organisms are minute rod-shaped bodies. They or their germs are very widely diffused throughout nature; they swarm in the air and in water, especially if containing organic matter, and are likewise found in great numbers within the bodies of men and animals. Anyone who possesses a microscope with a magnifying power of five hundred diameters can readily examine a very common form of bacterium. It is only necessary to take a glass of ordinary water from a spring or river, and to leave it in a room exposed for some days to the air. A thin coating, looking like a deposit of fine dust, is formed on the surface of the water; this dust consists of myriads of bacteria, which are readily seen when a drop of the water is examined. The bacteria are found to be in several stages of transformation: some are in long jointed rods, others represent one or more detached portions of these rods, and others appear as extremely minute rounded particles. The rods are capable of movement, and they are seen to wriggle through the fluid like small eels or snakes. The minute rounded particles are the spores, which eventually become rod-shaped bodies.

The peculiar interest connected with this simple experiment is due to the fact that minute organisms closely resembling those just described are found in the bodies of patients suffering from acute infectious diseases, and the question naturally arises as to the relation which exists between the organisms and the symptoms. Are the former the cause of the latter, or is their presence a mere coincidence? Another suggestion is that their presence is the result of the disease. If the symptoms are really caused by the presence and action of the bacteria, it would follow that differences must exist between the organisms found in different diseases. Great

and manifold difficulties attend such investigations; it is sufficient here to notice the extreme minuteness of the organisms, necessitating the use of the highest powers of the microscope for their detection. Moreover, as already stated, bacteria are found in large numbers in the bodies of healthy persons, and some of these organisms very closely resemble, if indeed they are not identical with, those that have been found in connection with severe infectious diseases. It is hardly conceivable that minute organisms which abound, for example, in the mouth and give rise to no changes, should be capable in other parts of causing the most serious symptoms.

In order to prove that a micro-organism is the real cause of a disease, at least three conditions must be fulfilled. In the first place, the same species of micro-organism must be invariably found in the parts affected by the disease in question, at any rate during the early stage, and in no other affection. Secondly the organism must be cultivated apart from the body in which it has been found, so as to make sure that it has been separated from all other morbid materials to the presence of which the disease might possibly be due. Thirdly, when the organisms thus cultivated have been introduced into the body of an animal capable of being attacked by the disease, similar symptoms ought to be set up, and the same micro-organisms should be found in the newly affected animal. If, in testing any given disease, these conditions are fulfilled, it is scarcely possible to doubt that the micro-organisms are the cause; they certainly cannot be the result. It is fair also to argue from diseases in which the conditions are fulfilled, that others in which, owing to circumstances, the tests cannot be properly carried out are due to similar causes.

Very strong evidence is forthcoming in support of the theory that micro-organisms are the cause of infectious diseases. Horned cattle and sheep are subject to a disease termed anthrax, or splenic fever, and more than thirty years ago, minute rod-shaped bodies were found in the blood of animals which had died from this disease, which is also communicable to man. The significance of these rods was suspected only after Pasteur's researches into the part played by minute organisms in fermentation. Guided by these discoveries, Davaine inoculated healthy animals with blood from those diseased, with the result of producing similar symptoms, while myriads of organisms were found in the bodies of those animals which had been inoculated with a very minute quantity of blood. The symptoms are very characteristic, and the disease at one time caused an enormous mortality among cattle in France. By the opponents of the bacterium hypothesis it might of course be urged that in the inoculation experiments other morbid materials were simultaneously conveyed, and that the transmission of the disease was due to their presence. To meet this objection and to fulfil the second condition

laid down in the last paragraph, experiments for cultivating the organism were set on foot in the following manner. A drop of blood taken from an animal that had died from anthrax was put into a glass flask containing an infusion of yeast, which had been carefully treated and proved to be free from organisms. In twenty-four hours the liquid, previously clear, was seen to be full of very light flakes, which, when examined under the microscope, were found to be masses of organisms resembling those contained in the blood. A drop taken from this first flask was added to a second and produced the same effect, and a drop from this was added to a third, and so on till a tenth flask was thus charged with organisms. In this way the organism was enormously multiplied and completely freed from the admixture of any other substance. Yet when a drop was taken from the twentieth or even the fiftieth flask of such a series and inserted under the skin of a sheep it caused anthrax or splenic fever, attended by the same symptoms as those produced by the drop of blood taken from the first animal. It is impossible to conceive of any clearer proof that the organism is the sole cause of the disease. So crucial a test, however, cannot be applied in every case, for many of the infectious diseases which are the scourge of mankind do not affect the lower animals, and it is therefore impossible to make trial of the organisms found in connection therewith. Besides anthrax, there are other infective diseases in animals which have been proved to be due to bacteria, and these facts strongly support the belief that the infectious diseases of mankind are due to the invasion of similar organisms. It is, however, impossible as yet to dogmatise upon this subject. There have already been too many assertions and inferences drawn therefrom which have turned out to be unwarranted. It is comparatively easy for skilled observers to detect the presence of micro-organisms, and whenever uniformity of appearance is demonstrable in connection with a given disease a decided addition has been made to our knowledge. For reasons above given, the next point, viz. the determining whether the organisms are the cause of the disease, is surrounded with great difficulties. The discoveries, however, with regard to splenic fever strongly support the view that bacteria are the efficient agents of contagious diseases.

Space will not permit me to do more than allude to the various theories that have been advanced with regard to the manner in which these tiny organisms produce disease. It was at first thought that they acted like parasites, and exhausted the system during their development. It is now, however, more commonly believed that the organisms elaborate a special ferment or poison, which, when produced in sufficient amount, gives rise to the symptoms of the disease.

One of the most valuable results of the study of these organisms is the discovery that by cultivation the virulence of some, at least, can

be so mitigated that when inoculated they produce only slight and non-fatal symptoms, the development of which in a given animal is nevertheless protective against future attacks of the original disease. By cultivating the organisms of splenic fever at a temperature of 108° it is found that filaments are produced but not spores, and that by repeated cultivation this growth becomes altered as regards its properties of causing disease. When inoculated it sets up a mild form of splenic fever, not dangerous to life, but perfectly protective against subsequent inoculation with the otherwise poisonous organisms. This discovery is worthy of being classed with that of vaccination as a protection against small-pox.

With regard to the channels through which the contagious organisms are spread, a few words will suffice to state what is known on this point, which is intimately connected with the subject of disinfection. Air and water are the chief media for the propagation of infectious disease. In the case of scarlet fever, which has been taken as the type, the scales detached from the skin and similar tissues from the throat contain the germs of the disease, and these find their way into the atmosphere and are received into the lungs. They attach themselves also to articles of clothing and furniture, and are thus often carried to long distances. In the cases of cholera and typhoid fever, the discharges from the patient find their way into water, which thus becomes the channel by which the diseases are propagated. Food, too, may become similarly contaminated. Milk, for instance, has been often known to convey the poisons of typhoid fever, of scarlet fever, and of diphtheria. In the case of the first, the contamination has been probably due to adulterating the milk with foul water containing the disease-germs, but it may have arisen in some cases from the typhoid emanations having been absorbed by the milk. The poisons of scarlet fever and diphtheria were probably transmitted to the milk from the skins and throats of persons employed in the dairy and recently convalescent or scarcely recovered from attacks of these diseases. The germs of certain other infectious diseases find their way into the system through abraded surfaces of the body.

The fatal character of many infectious diseases, and the ease and rapidity with which they spread and attack large masses of the population, are sufficient to account for the endeavours that have been made since very early times to arrest their progress. As in many other matters, practice has preceded science, and centuries before the vaguest ideas were entertained as to the nature of the diseases which seemed destined to be the scourges of mankind, efforts were made to stamp them out. As might be expected, many of these efforts were of the rudest description, but the earliest of them aimed at the object which the most modern science also seeks to

achieve, viz. the destruction of the contagious material. The term "disinfection" first occurred in literature towards the end of the last century. A French writer, Morveau, in 1801, published a work on *The Disinfection of the Air*, but the word was used somewhat earlier by a few English writers.

The most ancient method consisted in destroying by fire everything that had been in contact with the source of infection, the idea, no doubt, being that as fire consumes what is visible, it likewise destroys what is invisible. It is possible that the practice of burning the dead was in a measure based upon the conviction that a source of danger to the living was thus got rid of. The thirteenth chapter of Leviticus contains the most minute directions for disinfecting cases of leprosy; destruction of suspected articles by means of fire, the copious use of water, and isolation of the leper are the means prescribed. Inspection by the priest was to decide as to the efficacy of these measures. Among the Egyptians and certain Asiatic peoples, the fumigations used by the priests in exorcising disease were probably neither more nor less efficacious than similar processes in vogue at the present day in some European countries.

In the growth of ideas with regard to the causes of infectious diseases, the theory gradually took shape that the infecting matters were formed as a result of the processes of decomposition, and as these processes are generally attended with the development of more or less unpleasant odours, it seemed only natural to assume that the causes of the latter were also the causes of disease. Instead of regarding foul emanations as generally mischievous, the idea was entertained that there was something quite specific about them, and accordingly we find that attempts to mask or neutralise them were regarded as the best methods of checking the spread of infectious diseases. Deodorisation came to be considered as equivalent to disinfection. The idea was the more welcome inasmuch as it could be carried into effect without destroying property and without much difficulty. The attempt was certainly in the right direction, for the destruction of noxious agencies was the object in view. Unfortunately the means employed absolutely failed to effect their purpose, and belief in their efficacy caused very mischievous results, viz. a sense of false security and neglect of ventilation and cleanliness as regards sick persons and surrounding objects. In fact, the confident adoption of deodorants as a means of checking the spread of infectious diseases was a decidedly retrograde step as compared with the use of fire for destruction and of water as a purifying agent.

Chlorine gas was the deodorant which came into very general use at the beginning of the present century. It was freely employed in hospitals, both civil and military, in prisons, workhouses, &c., and was supposed to be efficacious against fevers, cholera, and small-pox. Whenever its characteristic odour could be perceived, danger of

infection was no longer feared. Persons carried about with them small flasks containing chemicals which generated this gas, and inhaled a little when they considered themselves exposed to risk. It soon, however, became evident that these precautions were useless; but even so recently as 1866, during the war between Austria and Prussia, it was thought sufficient to distribute saucers containing chloride of lime throughout the military hospitals, while only feeble efforts were made to insure cleanliness and other important sanitary requirements. In order to act as a real disinfectant, chlorine must be employed in a very different manner. The terrible mortality after surgical operations and severe injuries, a feature of which was that a large majority of patients died with symptoms of blood-poisoning, showed the futility of such attempts at disinfection.

In spite, however, of many similar failures, deodorisation has been almost universally regarded as the main object to be accomplished, and other chemical agents have been used in order to combat the gaseous products of decomposition. This object could certainly be attained if the sense of smell were to be the sole judge of success, and the practice of deodorisation led also to the discovery and use of many substances which have the power to prevent or retard putrefaction, and were therefore termed antiseptics, and regarded as equivalent to disinfectants. The conclusion, however, was soon forced upon the minds of experimenters that the infective agencies of fevers, small-pox, &c., were neither offensive gases nor the products of putrefaction, but something of an entirely different character. When an infectious disease became associated with the idea of a transportable material which increases and multiplies in its new ground, the discovery was not far off that organisms capable of reproduction are the real causes of the disease.

Definite ideas now prevail as to what is meant by disinfection, and as to the methods by which this object can be attained and the tests whereby their efficacy may be proved. Any substance may be regarded as a true disinfectant which, when added to a quantity of fluid swarming with bacteria, abolishes the reproductive power of these organisms. If the bacteria are capable of producing disease, or the poison of disease, a successful experiment has been made in the way of disinfection. This fact explains the paucity of the real experiences we possess of disinfection proper. Heat, exposure to air and sunlight, and the use of chemical agencies are the means at our disposal; it will be sufficient to point out a few of the methods in which they may be employed.

A very high temperature will, of course, destroy all forms of organised matter, and if we could always isolate the germs of disease and expose them to great heat, our task would be accomplished. Such isolation is of course impossible, but we make use of heat in the

destruction of germs which have found a resting-place in clothes and bedding. The articles are placed in ovens or hot-air chambers, the temperature of which can be raised many degrees above the boiling-point of water. A high temperature, however, has less effect upon the spores than upon the mature organisms, but successive heatings are found to effect the desired result. During their development the spores rapidly pass through several stages, in which they become softened and far more amenable to the action of heat. Exposure to a current of steam at a temperature of 212° is a still more satisfactory method than the use of dry heat. It involves less injury to the articles to be disinfected (a very important point when blankets and other woollen goods have to be dealt with) and it is more simple, more rapid, and more certain in its action. When the necessary appliances are not available, washing the clothes with soap and hot water and then boiling them for several hours, form an effective substitute. Exposure to sun and air will serve to complete the purification.

For the disinfection of the air of rooms many substances are recommended and employed, but the way in which they are generally used causes them to act merely as deodorants. Even at the present day, the fact is very incompletely realised that ventilation—that is, the continual admission of fresh air—is the only safe method of purifying the atmosphere of rooms containing sources of infection. It is simply useless to place saucers containing chloride of lime, carbolic acid, or Condy's fluid in a contaminated atmosphere with the hope that the germs floating about therein will be caught and killed, like mice in a trap. The chlorine, doubtless, will remove some offensive odours and readily diffuse itself throughout a room, but to act as a true disinfectant it must be so much concentrated that the air in the space containing it would be quite irrespirable by human beings. It is, however, when used scientifically, the best disinfectant we possess for purifying the walls, &c., of an empty room. All the openings should be rendered as nearly air-tight as possible, and the evaporation of a large quantity of water in the room aids the action of the chlorine. It is easily generated by adding hydrochloric acid to bleaching powder. For deodorising purposes in sick rooms and passages, a gas called "euchlorine" will be found very serviceable. It is produced when a few crystals of chlorate of potassium are dropped into a little hydrochloric acid. The mixture can be conveniently made in a small wide-mouthed bottle, which should be placed as near the ceiling as possible, so that the gas may descend into the room. Chlorine and its compounds are much heavier than atmospheric air. Bromine is even more powerful as a disinfectant than chlorine, and both are far superior to sulphurous acid.

Carbolic acid has been much overrated as a disinfectant. The spores of the micro-organisms discovered in cases of splenic fever

have been found to be absolutely unaffected after lying for upwards of three months in a five per cent. solution of carbolic acid in oil. It has been also found that vaccine matter mixed with carbolic acid in solution still retains its efficacy, and the question may therefore well be asked whether the highly diluted carbolic vapour used for purposes of aërial disinfection is not powerless to deal with an atmosphere saturated with the germs of infectious diseases.

When compelled to make use of water of a suspicious class, filtration and boiling constitute the most reliable methods of purification. Spongy iron is upon the whole the most efficacious filtering material. The water, especially if passed through sand afterwards, comes out quite clear and pure, and may be kept for a long time without showing any signs of the production of living organisms. Charcoal filters, on the other hand, certainly sometimes allow spores or germs to pass through unchanged, and when they are employed boiling should always be superadded. It is not sufficient to bring the water once to the boiling-point; in order to be efficacious repeated boilings are necessary, for the reasons given in a preceding paragraph. Milk of a suspicious character should always be thus thoroughly boiled. Travellers on the Continent do well to provide themselves with small portable filters, now easily procurable, for in many places the drinking-water is highly charged with impurities. It is satisfactory to know that the tannin contained in tea is a purifying agent of some value as regards organic matter present in water.

It would take up too much space and would be foreign to the purpose I had in view to describe all the methods of using the various disinfectants which are now offered to the public. With regard to many of them it is sufficient to say that their power has been absurdly overestimated. It cannot be too strongly insisted upon that deodorisation is by no means equivalent to disinfection. My object has been to indicate in the first place what in the present state of our knowledge seems to be the true theory as to the causation of infectious diseases, and to show how obstacles are presented to more rapid scientific progress by the extreme minuteness of the organisms with which we have to deal. With regard to disinfection, I have striven to prove how entirely it must depend for its success on the specific action exercised upon the disease-germs by the means employed. The realisation of this necessary relation cannot fail to dispel many a fond belief with regard to disinfectants; but it will leave us with a more intelligent and useful appreciation of their true properties, and by revealing how far we still are from the goal of complete knowledge, may even stimulate the investigator to explore paths of science which are yet unknown. Virgil says, "Felix qui potuit rerum cognoscere causas," and to nothing is this aphorism nowadays more applicable than to a knowledge of those agencies which produce infectious diseases.

ROBSON ROOSE.

EARTHQUAKES.

THE earthquake shocks which have recently occurred in America and Greece, and the great volcanic eruption in New Zealand, have served to keep the subject vividly before us during many months past, and have perhaps created in some alarmist minds an ungrounded expectation that the earth is about to enter on a new period of plutonic activity. It is natural then to ask at the present time what is an earthquake, and what are its causes. Notwithstanding the necessary incompleteness in the answers which can be given to these questions, yet a good deal more is known than appears to be the common property of newspaper writers. The object then of the present article is to give a rough sketch of the present state of knowledge in this complicated subject.

Although history abounds with more or less complete accounts of earthquakes, it is remarkable that hardly ten years have yet elapsed since an accurate record was first obtained of what actually occurs during an earthquake. The combination of circumstances is curious, by which a knot of Scotch students, working in Japan, has secured so considerable an advance in seismology. The incessant, but usually non-destructive earthquakes by which Japan is visited, the strange Japanese renaissance, and the importation of foreign professors, thoroughly trained at the Scotch Universities in an accurate perception of mechanical principles, are the three factors which have co-operated to bring about this result.

The Scoto-Japanese professors, of whom the most eminent are Ewing, Gray, and Milne, have studied their subject with admirable persistence, and have by their ingenuity placed seismologists in possession of instruments by which the motion of the ground during an earthquake is recorded on an accurate scale of time. Such instruments are called seismographs, or recording seismometers. During an earthquake the ground and all that is fixed to it move together, and at first sight it seems impossible to get anything to stay still during the vibration. An exact description of a scientific instrument would be out of place here, but a general notion of these seismographs may be easily grasped.

The horizontal pendulum of Zöllner, and a suggestion of Chaplin (also a professor in Japan), are the sources from which "the horizontal pendulum seismograph" of Ewing originated. The principles according to which it is constructed may be explained as follows: If we consider an open door which can swing on its hinges, and imagine that a sudden horizontal movement is given to the

doorpost, at right angles to the position in which the door is hanging, then it is clear that the outer edge of the door will begin to move with a sort of recoil in the direction opposite to that of the movement imparted to the doorpost. Since the doorpost moves in one direction, whilst the edge of the door recoils, somewhere in the door there is a vertical line which remains still. The exact position of this line depends on the proportion which the amount of the recoil of the outer edge bears to the direct motion of the doorpost. Now, if the sudden movement is imparted to the doorpost by means of the floor to which it is attached, it is clear that a pencil attached to the door at this vertical line will write on the floor the displacement of the doorpost, notwithstanding that the floor has moved. If next we suppose that there are two such doors hanging at right angles to one another from the same doorpost, and that a sudden horizontal movement *in any direction* is given to the floor, each pencil will write on the floor that part of the movement which was at right angles to its door. Lastly, if the floor or surface on which the record is written is kept moving uniformly by clockwork we obtain also a register in time as well as space.

But in an earthquake the surface of the earth undergoes also a vertical movement which has to be recorded. The principle by which an instrument may be constructed to attain this end is as follows :—If a weight hangs by a long elastic cord, so that when set dancing up and down it oscillates very slowly, then when a sudden jerk is given to the point of support, the weight will for the moment stand almost stationary, and a pencil attached to it may write its record on a surface fastened to the part jerked. This idea has been utilised in the construction of a vertical seismograph, but various important modifications have been introduced for the purpose of annulling the spontaneous dance of the weight after the shock has occurred.[1]

It will undoubtedly serve to give an impulse to this science that henceforth the intending observer need not waste time in devising and constructing instruments, but can purchase the complete equipment of a seismological observatory, as recommended by Ewing, and may begin work at once.

Many other instruments besides these have been used for the observation of earthquakes, and amongst the best are those of Bertelli, Rossi, and Palmieri. An instrument which tells only that there has been a shock, without giving a record of the nature of the movement, is called a seismoscope. Some of the Italian instruments are seismoscopes, which, however, give an approximate idea of the severity and direction of the vibration, and others claim to be

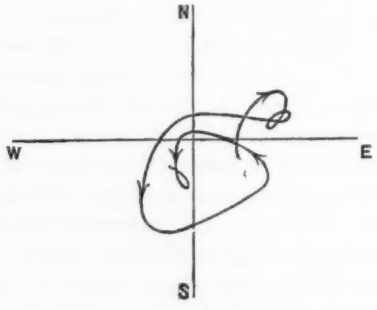
(1) I make no attempt to apportion the credit amongst the several inventors of these instruments. The men mentioned have played the leading parts, and the work of all seems to be thorough and sound.

accurate seismographs or seismometers. But I do not think that any of them can compete with the instruments described in outline above.

And what do recording instruments tell us of the actual occurrences during an earthquake?

"They show," writes Ewing,[1] "that, as observed at a station on the surface of the earth, an earthquake consists of a very large number of successive vibrations—in some cases as many as three hundred have been distinctly registered. They are irregular both in period and amplitude, and the amplitude does not exceed a few millimetres" (a millimetre is one twenty-fifth of an inch), "even when the earthquake is of sufficient severity to throw down chimneys and crack walls, while in many instances the greatest motion is no more than the fraction of a millimetre. The periods of the principal motions are usually from half a second to a second, but . . . . the early part of the disturbance often contains vibrations of much greater frequency. The earthquake generally begins and always ends very gradually, and it is a noteworthy fact that there is in general no one motion standing out from the rest as greatly larger than those which precede and follow it. The direction of motion varies irregularly during the disturbance—so much so, that in a protracted shock the horizontal movements at a single station occur in all possible azimuths" (that is to say to all points of the compass). "The duration, that is to say, the time during which the shaking lasts at any one point, is rarely less than one minute, often two or three, and in one case in the writer's experience was as much as twelve minutes."

The horizontal path pursued, in an actual earthquake at Tokio on March 8th, 1881, by the part of the recording instrument which was fixed to the ground, is shown in the annexed figure.[2] It is



magnified six-fold, and the time occupied from the beginning to the end of this part of the vibration was three seconds. This

(1) *Memoirs of the Science Department of the University of Tokio*, No. 9, 1883, p. 13.
(2) *Ibid.*, p. 58.

earthquake, although alarming, did no damage except to crack a few walls.

It is obvious that when the motion is so complicated, the impressions of people present go for little as compared with an automatic record. Observers often differ widely amongst themselves as to what was the direction of the prevailing oscillation, and the magnitude of the displacement of the ground is generally much exaggerated. It is true that in some of the great historic earthquakes the displacements are supposed to have been considerable; for example, according to Mallet, in the Neapolitan shock of 1857 it amounted to a foot, and Abella assigns six feet as the amplitude in the Manila earthquake of 1881. But without contesting the accuracy of these estimates, it is safe to say that such displacements are very rare, for, as proved by automatic seismographs, when the motion is as much as a quarter of an inch brick and stone chimneys are generally shattered.

Every railway traveller knows that it is not the steady speed, but the starting and stopping which jars him; that is to say, it is change of velocity by which he is shaken. The misconception of an observer in an earthquake arises from the fact that the sensation of being tossed about comes from the change of velocity to which he is subjected, rather than from the extent of his displacement. Now the greatest change per second of velocity may be considerable in a vibration, whilst the amplitude is small.

The force of gravity is the most familiar example of a change per second of velocity, for in each second the velocity of a falling body is augmented by a velocity of 32 feet a second. Ewing appears to have been the first to think of comparing the greatest change per second of velocity in an earthquake with gravity. Thus at Tokio, on March 11th, 1882, walls were cracked and chimneys knocked over, and in this shock the greatest change per second of velocity may be expressed by the phrase one thirty-fifth of gravity; in other words, the greatest change per second of velocity was $\frac{32}{35}$ of a foot per second. This conclusion enables us also to illustrate the mechanical consequences of the shock in another way; for if a wall 35 feet high leans over, so that the top brick projects a foot beyond the bottom brick, the forces tending to upset the wall are the same as those which occurred in this earthquake.

No great shock has ever yet been recorded by automatic instruments, and it is not unlikely that in these great disasters the instruments would be thrown out of gear, and no record would be obtained. Thus earthquakes which only work a moderate amount of destruction are the most favourable for scientific observation.

Since the oscillations at any one spot are usually in all sorts of directions, it is impossible, from observation at a single place, to form

a sound opinion as to position of the origin of the disturbance. Much information useful for the study of vibrations and of the laws of their decrease with increasing distance, has resulted from a laborious series of experiments made by Milne at Tokio. Artificial earthquakes were produced by the explosion of gun-cotton in holes in the ground, and by the fall of heavy weights, and the records at various distances from the origin were obtained.

From theoretical considerations, confirmed by these experiments, it is established that earthquake waves consist of oscillations of two kinds, namely, waves or vibrations of compression, and of distortion. In the first kind the motion of each particle of the ground is to and fro in the direction in which the wave is travelling; and in the second kind the excursions are at right angles to the direction of wave propagation. As the former vibrations travel more rapidly than the latter, all the compressional waves may have passed a given station before the arrival of the distortional waves, and thus the shock may be apparently duplicated. Or, nearer to the origin, the two series will overlap, and a complex movement ensues, such as that exhibited in the figure above. The phenomena are further complicated by frequent reflections and refractions, as the wave passes from one geological stratum to another. The rate at which these waves travel depends on the nature of the rock through which the movement passes: velocities ranging from a mile per second to five miles per second are usual.

The destructive effects of earthquakes on buildings are notorious, and it is unnecessary to describe them here. By an examination of ruined buildings a competent observer is often able to obtain a good deal of information as to the nature of the shock. Thus Mallet visited the towns destroyed by the Neapolitan earthquake of 1857, and, by a very careful consideration of the fractures in walls and other damage, was able to draw a number of interesting conclusions as to the directions and amplitudes of the principal vibrations and as to the site of the centre of disturbance.

Architects should be able, by an adherence to sound mechanical principles, to construct buildings which should stand against all but the severest shocks, and much has already been done in this way. Where a choice for the site of an intended building is possible, the most important consideration is that it should be where there has been the greatest immunity from vibration on previous occasions, for even within a very small area, different spots are very differently affected. In most regions there is only a single important centre whence earthquakes originate, and the safe places are situated in what may be called earthquake-shadow for the prevalent vibrations. For just as a high wall, a hill, or a railway cutting often completely cuts off sounds by forming a sound-shadow, so a ravine or some

arrangement of the geological formation may afford earthquake-shadow for particular places.

It is not in general possible to pick out the favourable sites by mere inspection, for the distribution of vibration is often apparently capricious. Thus Milne tells us of a princely mansion at Tokio "which has so great a reputation for the severity of the shakings it receives, that its marketable value has been considerably depreciated, and it is now untenanted."[1]

In a town which is frequently shaken there is no need to wait long to carry out a rough survey with seismographs, and thus to obtain an idea of the relative shakiness of the various parts. If such a survey is impossible, it is best to avoid as the site for building a loose soil, such as gravel, resting on harder strata, and the edge of a scarp or bluff, or the foot of similar eminences.[2]

The same capriciousness of distribution which is observable on a small scale is found to hold on a large scale when we consider the distribution of earthquakes throughout a whole country. Regions subject to earthquakes, or seismic areas, appear to have fairly definite boundaries, which remain constant for long periods. For example, in Japan earthquakes are rarely felt on the western side of the central range of mountains.

The search for the actual point whence the earthquake originated is one of the most interesting branches of the science. In order to trace the earthquakes in a country to their origin, the places of observation should not be chosen where there is comparative immunity from shaking. Thus a seismic survey is necessary, and the limits of the seismic areas will be discovered in the course of it. Milne commenced his survey of Japan by sending to the local government offices in the important towns, distant from thirty to a hundred miles from Tokio, packets of post-cards, one of which was to be returned to him at the end of each week with a record of the shocks which had been felt. "The barricade of post-cards was then extended farther northwards, with the result of surrounding the origin of certain shocks amongst the mountains, whilst others were traced to the sea-shore. By systematically pursuing earthquakes, it was seen that many shocks had their origin beneath the sea, ... but it was seldom that they crossed through the mountains forming the back-bone of the island."[3] When the country had been thus mapped out, it was possible to choose the most advantageous sites for the observatories.

It would carry us too far into technical matters to describe the method of searching into the bowels of the earth for the actual point of disturbance. It must here suffice to say that if a shock be accu-

(1) Milne, *Earthquakes*, p. 134. (2) *Ibid.*, p. 144.
(3) *Ibid.*, p. 189.

rately timed at various places, and if the approximately circular ring where it was most severe be determined, it is possible to find with fair accuracy the spot or spots under which it originated and the depth of the earthquake centre. Even without accurate time-observations, Mallet was able to show that the Neapolitan shock originated between three and seven miles below the surface. The Yokohama earthquake of 1880 appears to have had its centre at a depth of from one and a half to five miles. Notwithstanding that one earthquake has been estimated as originating at a depth of fifty miles, it is probable that in all cases the centre of shock is only a few miles below the surface.

The vagueness as to the position which has been assigned for the centre of disturbance in the case of particular earthquakes probably depends less on the difficulty of tracing back the vibrations to their origin, than on the fact that the shocks do not usually originate in a single point, but rather along a line of a mile or two in length.

As to the way in which seismic activity is distributed geographically over the earth's surface, certain broad conclusions have been fairly well ascertained. If a map be shaded, so as to represent the frequency of earthquakes, we see that the shading has a tendency to fall into bands or ribbons, which generally follow the steeply sloping shores of continents and islands; and it is probable that the actual origins of the shocks are generally situated under the sea not far from the coast.

It is a further interesting peculiarity that the most important bands fall end to end, so that they may be regarded as a single ribbon embracing nearly half the earth. It may be suspected that this ribbon really meets itself and forms a closed curve, but this cannot be proved as yet. We may begin to trace its course at Cape Horn, whence it follows the Andes along the whole western coast of South America. At the north of that continent it becomes somewhat broader, but its course is clearly marked along the line of the West Indies from Trinidad to Cuba. Hence it passes to the mainland in Mexico, and then runs along the whole western coast of North America. We then trace the line through the Aleutian Islands to Kamschatka, and thence southward through the Japanese Islands, the Philippines, and the Moluccas to Sumatra and Java. Another branch seems to run from Sumatra, through New Guinea, to New Zealand, and the closed curve may perhaps be completed through the antarctic regions, which are known to be volcanic. Returning to the first branch which we traced as far as Java, to the westward the seismic areas become more patchy and less linear. It may, however, perhaps be maintained that the ribbon runs on through India, Persia, Syria, the Eastern Mediterranean, Greece, and Italy.

This grouping of seismic areas into a ribbon does not comprise all the regions of earthquakes, but it must rather be taken as meaning

that there is one great principal line of cracking of the earth's surface. In speaking here of earthquakes, those sensible shocks are meant which are sufficiently severe to damage buildings, for, as will be explained below, there is reason to believe that the whole earth is in a continual state of tremor.

Seismic areas are not absolutely constant in their limits, and cases are known where regions previously quiescent have become disturbed. It seems likely that the recent disastrous earthquake at Charleston belongs to the West Indian system of seismic activity, but there is no reason to suspect a permanent extension of the West Indian area so as to embrace the Southern States. On the contrary, it is far more probable that this disastrous shock will remain a unique occurrence. The previous experience of great earthquakes, such as that of Lisbon in the middle of the last century, shows, however, that the inhabitants of Charleston must for the next year or two expect the recurrence of slight shocks, and that the subterranean forces will then lull themselves to sleep again.

With regard to the distribution of earthquakes in time there is no evidence of either decrease or increase within historical periods, and although physical considerations would lead us to suppose that they were more frequent in early geological times, geology at least can furnish no proof that this has been the case.[1]

A great deal has been written on the causes of earthquakes, and many of the suggested theories seem fanciful in the highest degree. It is clear, however, that the primary cause resides in the upper layers of the earth, and that the motive power is either directly or indirectly the internal heat of the earth. The high temperature of the rocks, in those little scratches in the earth's surface which we call mines, proves the existence of abundant energy for the production of any amount of disturbance of the upper layers. It only remains to consider how that energy can be brought to bear. One way is by the slow shrinking of the earth, consequent on its slow cooling. Now the heterogeneity of the upper layers makes it impossible that the shrinkage shall occur with perfect uniformity all round. Thus one part of the surface will go down before another, and as this must usually occur by a cracking and sudden motion, the result will be an earthquake.

The seismic ribbons of which we have spoken are probably lines of weakness along which cracking habitually takes place. Along these lines there are enormous dislocations of the geological strata, and earthquakes are known to follow lines of faulting. The geologically recent elevation of the Pacific coast of South America is, obviously, from this point of view, connected with the abundance of volcanoes and the frequency of earthquakes along the chain of the Andes.

(1) Geikie, *Contemporary Review*, Oct., 1886.

One would think that the continual ejection of lava and ashes from an active volcano must leave a hollow under the mountain, and that some day the cavern would suddenly collapse. It has, however, been observed that volcanic eruptions and severe earthquakes are to some extent alternatives, so that it seems as though the volcanic vent served as a safety valve for the liberation of the dangerous matter. But the theory of the collapsing cavern must not be wholly rejected, for some disastrous earthquakes affecting only very restricted areas, such as that of Casamicciola in Ischia, are hardly otherwise explicable. In this case Palmieri has attributed the formation of the cavern to evisceration under the town produced by hot mineral springs.

In the theories of which we have just spoken, the internal heat of the earth acts indirectly, by giving to gravitation an opportunity of coming into play. But as in volcanic eruptions enormous quantities of steam are usually emitted, it is probable that the pressure of steam is the force by which the lava and ashes are vomited forth, and that the steam is generated when water has got among hot internal rocks. From this point of view we can understand that an eruption will serve as a protection against earthquakes, and that the centres of disturbance will usually be submarine.

It may on the whole be safely concluded that a diversity of causes are operative, and that some earthquakes are due to one and others to other causes.

It would, however, be certainly wrong to look only to the interior of the earth for the causation of earthquakes, since the statistics of earthquakes clearly point to connections with processes external to the solid earth.

The laborious inquiries of M. Perrey show that there are more earthquakes at the time of full and change of moon than at other times, more when the moon is nearest to the earth and more when she is on the meridian than at the times and seasons when she is not in those positions relatively to the earth The excess of earthquakes at these times is, however, not great, and an independent investigation of the Japanese earthquakes does not confirm Perrey's results. It is well, therefore, still to hold opinion in suspense on this point. If, however, Perrey's result should be confirmed, we must attribute it to the action of those forces which produce tides in the ocean, and therefore at the same time cause a state of stress in the solid earth.

Then again it is found that earthquakes are indubitably more apt to occur when there is a rapid variation of the pressure of the air, indicated by a rise or fall of the barometer, than in times of barometric quiescence. It is certain that earthquakes in both hemispheres are more frequent in the winter than in the summer; this is probably connected with the greater frequency of sudden

rises and falls of the barometer at that season. It may, however, be urged against this view that volcanic eruptions are somewhat more frequent in the summer. But whatever be the action of these external processes with regard to earthquakes, it is certain that the connection between the two is merely that of the trigger to the gun. The internal energy stands waiting for its opportunity, and the attraction of the moon or the variation in atmospheric pressure pulls the trigger. Thus the predictions of disaster which have frequently been made for particular dates must be regarded as futile.

It has long been known that an earthquake is preluded by slight tremors leading by a gradual crescendo to the destructive shocks. But within the last fifteen years it has been discovered that the earth's surface is being continually shaken by tremors, so minute as to remain unsuspected without the intervention of the most delicate instruments. In every country where the experiment has been tried these tremors have been detected, and not merely at certain periods but so incessantly that there is never a second of perfect rest. The earth may fairly be said to tremble like a jelly. The pioneer in this curious discovery was Father Bertelli. His experiments relate only to Italy, but that which has been found true also of England, France, Egypt, Japan, Brazil, and a solitary island in the South Pacific Ocean, probably holds good generally, and we may feel sure that earth tremors or "microseisms" are not confined to countries habitually visited by the grosser sort of earthquakes.

Almost all our systematic knowledge of microseisms comes from Italy, for a co-operation has been arranged there between many observers with ingenious instruments at their disposal. Besides Bertelli, the most eminent of the observers is Cavaliere Michele de Rossi, who has established at Rome a "Geodynamical Observatory," and has initiated as an organ of publication the "Bulletino del Vulcanismo Italiano," in whose pages are to be found contributions from Malvasia, Monte, Cecchi, Palmieri, Egidi, Galli, and many others. The literature which has already accumulated on the subject is extensive, and it will only be possible generally to indicate its scope.

The Italians have, of course, occupied themselves largely with earthquakes, but in that field their results do not present a great deal that is novel. The instruments in use for the observation of microseisms are scarcely to be classed as perfect seismographs or seismometers, and the minuteness of the movements to be observed no doubt entails especial difficulties. The "normal tromometer" of Bertelli and Rossi is a simple pendulum, about six feet long, with an arrangement for observing the dance of the pendulum-bob with a microscope. With this and other instruments it has been established that the soil of Italy trembles incessantly. The agitation of the

pendulum is usually relatively considerable for about ten days at a time; towards the middle of the period it increases in intensity, when there generally ensues an earthquake which can be perceived without instruments; the agitation then subsides. This has been called by Rossi a seismic period or seismic storm. After such a storm there ensues a period of a few days of relative quiescence.

The vibration of the pendulum in these storms is in general parallel to neighbouring valleys or chains of mountains, and its intensity seems to be independent of wind, rain, and temperature. Care is of course taken not to mistake the tremors due to carts and carriages for microseismic agitation, and it has been found easy to effect this separation. The positions of the sun and moon exercise some influence on these tremors, but the most important concomitance which has been established is that they are especially apt to be intense when the barometer is low.

Microseismic storms are not strictly simultaneous at different places in Italy, but if a curve be constructed to represent the average intensity of agitation during each month, it is found on comparison of the curves for a year—for, say, Rome, Florence, and Leghorn—that there is a very close agreement between them.

Rossi has also made some interesting experiments with the microphone on microseisms. In this instrument one electrical conductor is arranged to rest on another at a single point—say, a nail resting on its point on a shilling. One copper wire is attached to the nail and another to the shilling, and an electric current, with an ordinary telephone receiver in the circuit, is then passed through the system. As long as the microphone is still, nothing is heard; but on the occurrence of the very slightest tremor, a noise is audible in the telephone. The instrument can be made so sensitive that a fly may be heard to walk near the microphone with a loud tramp, and a touch with a hair to the nail or to the shilling would sound like the grating of a harsh saw.

Rossi placed his microphone on the ground in a cavern sixty feet below the surface, on a lonely part of Rocca di Papa, an extinct volcano not far from Rome, whilst he listened with his telephone at the surface of the earth. He then heard the most extraordinary noises, which, as he says, revealed "natural telluric phenomena."

The sounds he describes as "roarings, explosions occurring isolated or in volleys, and metallic or bell-like sounds." They all occurred mixed together, and rose and fell in intensity at irregular intervals. He found it impossible by any artificial disturbance to a microphone to produce the greater number of these noises. The microphone is especially sensitive to vertical movements of the soil, whereas the tromometer fails to reveal them. Nevertheless there was more or less concordance between the agitations of the two

instruments. In order then to determine the noises corresponding to various kinds of oscillation, he transported his microphone to Palmieri's Vesuvian observatory, where mild earthquakes are almost incessant; here he discovered that each class of shock had its characteristic noise. The vertical shocks gave the volleys of musketry and the undulatory shocks the roarings. By a survey with his microphone he concluded that the mountain is divided by lines of approximate stillness into regions where the agitation is great. If a metal plate dusted over with sand is set into vibration by a violin bow rubbing on its edge, all the sand congregates into lines which mark out a pattern on the plate: these lines are nodes, or lines of stillness. It appears then that, when Vesuvius trembles with earthquake shocks, its method of vibration is such that there are nodes of stillness.

At the Solfatara of Pozzuoli the sounds were extraordinarily loud; and the prevailing noise could be imitated by placing the microphone on the lid of a boiling kettle. Similar experiments have since been made by Milne in Japan with similar results.

Some years ago my brother Horace and I made some experiments at Cambridge with a pendulum, so arranged as to betray the minutest displacements. It was then but few years since Bertelli and Rossi had begun to observe, we had read no account of their work, and earth tremors were quite unsuspected by us. Indeed, the object of our experiment, the measurement of the moon's attraction on a plummet, was altogether frustrated by these disturbances. The pendulum was successfully shielded from the shaking caused by traffic in the town, so that there was no perceptible difference in its behaviour in the middle of the night on Sunday, and in the day-time during the week. We were then much surprised to find that the dance of the pendulum (for it was not a regular oscillation) was absolutely incessant. The agitation was more marked at some times than at others; the relatively large swinging, though absolutely very small, would continue for many days together, and this would be succeeded by a few days of comparative calm. In fact we saw the seismic storms and calms of the Italians.[1] As the instrument was designed for another purpose, and was not quite appropriate for microseismic observation, we did not continue to note it after a month or two. But the substantial identity of the microseisms of England and Italy seems fairly well established.

The causes of these interesting vibrations are as yet but little understood, and it may be hoped that the subject will receive further attention. It seems probable that they are in part true microscopic earthquakes, produced by the seismic forces in the neighbourhood. But they are also doubtless due to the reverberation of very distant shocks. It is probable that there is not a minute of time with-

(1) *Report to British Association on the Lunar Disturbance of Gravity*, 1881.

out its earthquake somewhere, and the vibrations may often be transmitted to very great distances. In only a very few cases has it hitherto been possible to identify a tremor with a distant shock, and even then the identification is necessarily rather doubtful. One of the best authenticated of these cases was when M. Nyrèn, an astronomer at St. Petersburg, noticed on May 10 (April 28), 1877, a very abnormal agitation of the levels of his telescope, an hour and fourteen minutes after there had been a very severe shock at Iquique, in Peru.

Astronomers are much troubled by slight changes in the level of the piers of their instruments, and they meet this inconvenience by continually reading their levels and correcting their results accordingly. Of course they also take average results. These troublesome changes are probably earth tremors, with so slow a motion to and fro that the term tremor becomes inappropriate. This kind of change has been called a displacement of the vertical, since a plummet moves relatively to the ground. Thus we found at Cambridge that as the pendulum danced it slowly drifted in one direction or the other. There was a fairly regular daily oscillation, but the pendulum would sometimes reverse its expected course for a few minutes, or for an hour. During the whole time that we were observing, the mean position of the pendulum for the day slowly shifted in one direction; but even after a voyage of six weeks the total change was still excessively small. How far this was a purely local effect and how far general we had no means of determining.

This is a subject which M. d'Abbadie, of the French Institute, has made especially his own. Notwithstanding his systematic observations, carried on during many years in an observatory near the Bay of Biscay, on the French side of the Spanish frontier, hardly anything has been made out as to the laws governing displacements of the vertical. He has, however, been able to show that there is a tendency for deflection of the vertical towards the sea at high tide, but this deflection is frequently masked by other simultaneous changes of unexplained origin.

This result, and the connection between barometric variations and earthquakes and tremors, should make us reflect on the forces which are brought into play by the rise and fall of the tide and of atmospheric pressure. Our very familiarity with these changes may easily blind us to the greatness of the forces which are so produced. The sea rests on the ground, and when the tide is high there is a greater weight to be supported than when it is low. A cubic foot of water weighs 62 lbs.; thus if high-tide be only ten feet higher than low-tide, every square foot of the sea bottom supports 620 lbs. more at high than at low-water; and 620 lbs. to the square foot is nearly eight million tons to the square mile. Again, the barometer

ranges through fully two inches, and a pool of mercury two inches deep and a square foot in area weighs 145 lbs.; hence when the barometer is very high every square foot of the earth surface supports about 140 lbs. more than if it is low; and 140 lbs. to the square foot is 1,800,000 tons to the square mile.

Now rocks are not absolutely rigid against flexure, certainly less so than most of the metals, and these enormous weights have to be supported by the rocks. Taking a probable estimate for the elasticity of rocks, I have made some calculations as to the amount of effect that we may expect from this shifting of weights, and I find that it is likely that we are at least three or four inches nearer the earth's centre when the barometer is very high than when it is very low.[1]

It may be that the incessant straining and unstraining of the earth's surface is partly the cause of earth-tremors, and we can at least understand that these strains may well play the part of the trigger for precipitating the explosion of the internal seismic forces.

The calculations also show that near the sea-coast the soil must be tilted towards the sea at high-water, and that the angle of tilting may be such as could be detected by a delicate instrument like that of M. d'Abbadie.

This breathing of the solid earth seems to afford a wide field for scientific activity. It would be premature to speculate as to how far it will be possible to educe law from what is now chaotic; but it is clear that the co-operation of many observers will be required to separate the purely local from the true terrestrial changes. The directors of astronomical observatories have peculiar facilities for the study of displacements of the vertical, and it is to be regretted that hitherto most of them have been contented to banish, as far as may be, the troubles caused in their astronomical work by earth tremors and displacements of the vertical.

G. H. Darwin.

(1) *Second Report to British Association on Lunar Disturbance of Gravity*, 1882.

THE PROVINCE OF PHYSICS: A REJOINDER TO PROFESSOR HUXLEY.

Professor Huxley, in his article *Science and Morals* in the December number of this Review, desiderates "an explanation"[1] of the "theory of his tenets"[2] expressed in my paper, *Materialism and Morality*, published in November. In proceeding to comply with the requisition of, I will not say my opponent, but my critic, I shall endeavour to be as little polemical as possible. To skill in controversy I make no pretence. And if I possessed it, assuredly I should not choose to exercise it against Professor Huxley. I firmly believe that, as he had said, we have both at heart the interest of the same sacred cause: that we may both unfeignedly declare "seu vetus est verum, diligo sive novum," however widely our convictions as to what is true may differ.

Before I turn to the point in Professor Huxley's strictures specially requiring attention from me, I must say a word or two as to my own article which elicited them. The Professor represents me as having proceeded "after the manner of a mediæval disputant." I can conceive of nothing less mediæval than my paper on *Materialism and Morality*, either in form or in thought. Professor Huxley, who quotes St. Thomas Aquinas—although with some misapprehension of his meaning[3]—must be well aware how scholastic disputa-

(1) P. 792. (2) P. 788.

(3) The first of the two passages quoted by Professor Huxley from St. Thomas Aquinas is, "Ratio autem alicujus fiendi in mente actoris existens est quædam præexistentia rei fiendæ in eo." "This," the Professor says, "puts the whole case [for Determinism] in a nutshell. The ground for doing a thing in the mind of the doer is, as it were, the pre-existence of the thing done." But that is not what Aquinas means. He means that you cannot do a thing unless you have an ideal conception of it as doable.

The second, which Professor Huxley also considers an excellent "statement of the case for Determinism," runs as follows—

"Omnia quæ sunt in tempore, sunt Deo ab æterno præsentia, non solum ea ex ratione quâ habet rationes rerum apud se presentes, ut quidam dicunt, sed quia ejus intuitus fertur ab æterno supra omnia, prout sunt in sua præsentialitate. *Unde manifestum est quod contingentia infallibiliter a Deo cognoscuntur*, in quantum subduntur divino conspectui secundum suam præsentialitatem; et tamen sunt futura contingentia, suis causis proximis comparata."

This is a commonplace of the schools. "Futura contingentia" means free acts; and all Catholic theologians agree that they are infallibly foreknown. But they are foreknown as free, and cannot be predetermined by Absolute Power in any way that would destroy this freedom. Professor Huxley—no doubt unwittingly—cuts Aquinas's doctrine in halves, and adopts the half which suits him. Of the passage cited by Professor Huxley from the *De Civitate* it must suffice to say that St. Augustine means not an inevitable fate but a "wise" Providence.

tions were, and are still, conducted. I suppose, therefore, that I may regard this description of my dialectics as a mere harmless pleasantry, introduced to season a grave discussion. I may remark in passing that great gain would accrue if a little of the exact method of the schools could be introduced into the arguments upon momentous subjects which from time to time find place in our leading Reviews. "The rigorous definition, careful analysis, precise classification," the absence of which I deplored in my last contribution to these pages, would soon make an end of much loose thinking and looser writing. Of course no one would number Professor Huxley among loose thinkers or loose writers. Still, in matters of fact, his article might supply more than one instance to justify this view of mine. Thus the remark—perhaps he would call it a thesis—in my paper[1] that Materialism, in all its schools, is led to deny free will, is treated by the Professor[2] as though it were equivalent to the assertion that every school which denies free will is Materialistic. He has "converted" my proposition wrongly by universalising the predicate. Again, he uses the word "spontaneity" in a sense quite peculiar to himself. "The term, if it has any meaning at all," he asserts, "means uncaused action."[3] This is really an astounding statement. I will only remark upon it, *pace tanti viri*, that "spontaneity" unquestionably has a meaning in philosophy; and that, as unquestionably, "uncaused action" is not what it means. I know that the precise terminology of the schools is impossible in writings which are addressed to "the general reader." We must adopt popular modes of speech when we appeal to the unscientific tribunal of public opinion. The problem for those of us who think we have something to teach the world is to translate our philosophy into the world's language. It is a problem which can never be completely solved. Identity between the vulgar and the scientific vesture of ideas is impossible. But assuredly the translator *ad populum* is not warranted in imposing a brand-new sense of his own upon technical terms of well-understood significance.

Such, at all events, is the rule which I myself have followed, as in my other writings, so in my article, *Materialism and Morality*. The argument of the paper was briefly this: that "the invalidation of the moral code, the prevalence of ethical Agnosticism, scepticism as to all first principles," are unmistakable signs of the times, which, as practical men, we may well consider portentous; and that the denial of free will and moral responsibility now rife in the world is largely owing to the spread of Materialism.[4] I pointed out how the more popular literature of the day, which is the truest expression of

(1) P. 585. (2) P. 799–800 (3) P. 798.

(4) It may, in some cases, be the determinism of an Idealist school; but, for the most part, I am convinced, it is something much baser.

society, is redolent of Materialism in its most putrid forms. And here Professor Huxley warmly sympathises with me, as we might have felt sure he would. I also said that, "if we survey the higher thought of Europe as a whole, we must find it, too, largely given over to Materialism." And among the exponents of that higher thought of whose teaching this is "*the practical outcome*," I was led to mention Professor Huxley as one of the most eminent and most influential. His doctrines, I ventured to say, seem to me "*in their ultimate resolution*" to be "substantially at one" with the Positivism which finds so positive an exponent in Mr. Frederic Harrison. And remembering Mr. Herbert Spencer's wise admonition that "only by varied iteration can alien conceptions be forced upon reluctant minds," I proceeded to amplify my meaning by saying "Professor Huxley puts aside as unverifiable everything which the senses cannot verify, everything beyond the bounds of physical science, everything which cannot be brought into a laboratory and dealt with chemically." These last words of mine have supplied Professor Huxley with "three theses," to the demolition of which he has devoted four pages of what I may, perhaps, call without offence "very gracious fooling." He then proceeds to repudiate the doctrine of Materialism, as he understands it, just as heartily as he repudiates the doctrine of Spiritualism as I have presented it,[1] and to explain in some detail why he does this. Lastly, he begs me, "while denouncing physical science as the evil genius of modern days—mother of Materialism, Fatalism, and all sorts of other condemnable isms—to lay the blame on the right shoulders, or at least to put in the dock, along with Science, those sinful sisters of hers, Philosophy and Theology, who being so much older, should have known much better than the poor Cinderella of the schools and universities over which they have so long dominated;" poor Cinderella, who "lights the fire, sweeps the house, and provides the dinner;" and "in her garret has fairy visions out of the ken of the pair of shrews who are quarrelling downstairs."[2] And, to conclude, he proclaims that "the safety of morality lies neither in the adoption of this or that philosophical speculation, or this or that theological creed, but in a real and living belief in that fixed order of nature which sends social disorganisation upon the track of immorality, as surely as it sends physical disease after physical trespasses."[3]

Now the main point at issue between Professor Huxley and myself is, whether I am right in reckoning him among teachers of Materialism. He protests that if he "may trust his own knowledge of his own thoughts," this is "an error of the first magnitude."[4] But surely the question is not about Professor Huxley's own know-

(1) P. 793. (2) P. 801—2. (3) P. 802. (4) P. 788.

ledge of his own thoughts. It is as to the obvious meaning and practical consequences of the words to which he has committed himself in print, and which he is not in the least disposed to retract. If, as I believed when I wrote my paper *Materialism and Morality*, and as I still believe after the most careful study of Professor Huxley's criticism upon it, there are among those words many statements which commit him to the doctrine, that is enough for my vindication, enough for the explanation which Professor Huxley seeks from me. Should it appear that the Professor, in other and perhaps contiguous statements, has committed himself to Idealism, the question might then arise whether he held both doctrines simultaneously or in succession. But I submit it would be no argument against his having, by force of terms, surrendered to Materialism, that he had never, in his own mind, intended to do so, or that he had before or afterwards preached Idealism. Rather it would illustrate what has been well pointed out by a recent very clear-headed writer, who, like myself, greatly admires Professor Huxley's high gifts:—"It is just because science has private opinions of its own, just because of its convictions of the relativity of knowledge, just because of the irresistible arguments of Idealism, that it gets into a muddle. It has officially to profess Realism, and covertly to recognise Idealism. It then sets about solving the problem of their reconciliation, by stating it in terms which are applicable to the first only."[1] Professor Huxley, in his *Lay Sermon* on the Physical Basis of Life, proposed to lead his hearers "through the territory of vital phenomena to the materialistic slough," and then "to point out the path of extrication."[2] My contention is that a large number of his students—I believe the vast majority—and their name is legion, are led by him into the materialistic slough never to emerge from it. Some delicacy of discrimination, not commonly found in the average reader of to-day, is required in order to realise that Professor Huxley's materialistic language is really meant to be not more than metaphorical; that it implies only working hypotheses, which need not in the least be truths of fact.

I am anxious to make good my ground as I go, and therefore, I shall, before proceeding further, here set down two observations. First let me say, in correction of a misapprehension of Professor Huxley's, which is to me quite unaccountable, that with physical science, working in its own province and by its own methods, I have no quarrel. I have not denounced it, I have never dreamed of denouncing it, as "the evil genius of modern days, mother of Materialism and Fatalism, and all sorts of other condemnable isms." There is not a syllable to that effect in my paper. And I cannot conceive how Professor Huxley,

(1) Coke. *Creeds of the Day*, vol. ii., p. 200.
(2) *Lay Sermons*, p. 139 (fifth edition).

who, I am very sure, has no wish to misrepresent me, was led to attribute to me an absurdity, which—to put the case in a way likely, I think, to appeal strongly to him—would disgrace even "the heated pulpiteer." But, as I have been at the pains to point out, in my inculpated article, physical science is one thing; the extra-judicial utterances of its professors, however illustrious, are quite another. And it is matter of everyday observation that, upon the score of authority in this province of human thought, eminent persons are often credited with a like authority in other provinces, where physical science, as such, has nothing whatever to say. One of those provinces, I take leave to hold, is ethics. And when Professor Huxley asserts that "the safety of morality is in the keeping of science," I must say that he is putting forth such an extra-judicial utterance, upon which I shall have more to remark by-and-by. For the truth is that physical science, as such, can know nothing, good or bad, about morality—"il n'y a rien de sale ni d'impudique pour la science," writes Diderot in the *Rêve d'Alembert*, correctly enough—and therefore is not competent to track or to state the connection between morality and social disorganisation. Morality and immorality are of the will and the intellect. But with the will and the intellect, as Professor Huxley himself witnesses when he preaches Idealism, physical science has no concern. Ah, yes. Cinderella must confine herself to "lighting the fire, sweeping the house and providing the dinner," and not exercise herself in great matters, which are too high for her. I shall have to return to this point.

My second preliminary observation is in correction of another huge error concerning me into which Professor Huxley has fallen. "Mr. Lilly says," he writes, "that when Christian dogmas vanish, virtue will disappear too, and the ancestral ape and tiger will have full play."[1] Mr. Lilly has said nothing of the sort, but, on the contrary, has expressly disclaimed that view. "Litera scripta manet." And here are my words, which seem to me quite plain and unambiguous: "Not, indeed, that I am now pleading for Christianity. Still less am I pleading for any special form of it. There is little in Christian morality that is exclusively Christian. And I am not prepared to assert that many of the most precious of the ethical elements of our civilisation might not survive a general decay of specifically Christian dogmas. My present contention is more general. It is this: that morality can have root only in the spiritual nature of man. If, from that happy soil, watered by the river of life, and refreshed by the dews of heaven, you transplant it to the rocks and sands of Materialism, wither and die it must."[2] Surely these words leave not a shadow of justification for Professor Huxley's assertion. Of course I feel persuaded—to borrow a phrase of his—that "there must be an

(1) *Science and Morals*, p. 801. (2) *Materialism and Morality*, p. 591.

explanation which will leave his reputation for common sense and fair dealing untouched."[1] What it may be I do not presume to suggest. But he must let me say, in his own emphatic words, that "I have never given the slightest ground for the attribution to me of the ridiculous contention"[2] that virtue is inseparably connected with Christian dogmas.

And now as to Professor Huxley's "Materialism." In the first place I observe that I cannot quite accept his definition of the term. It suits his argument, unquestionably; but it is too narrow. He says Materialism amounts to this: "That there is nothing in this universe but matter and force; and *that all the phenomena of nature are explicable by deduction from the properties assignable to these two factors.*"[3] I reject the second half of this definition—the words which I have put in italics—as unnecessary and as incorrect. A Materialist may say, "I cannot explain the process by which certain products of matter and force come about, but I maintain that they are products of these two factors only, and not of a third different from them." Many—perhaps most—Materialists would grant that they cannot understand how molecular action produces thought; but all the same, they contend that there is no cause of thought except matter. Professor Huxley knows that just as well as I do, and probably much better. Of course the virtue of the saving clause in his definition is plain enough. He agrees with the Materialists as to the *fact* of origin. "Material changes are the causes of psychical phenomena."[4] But if you say, "Dear me; that sounds uncommonly like Materialism," he turns round indignantly and exclaims, "*Nego*—I say No: the proprieties do not permit me to make the negation quite so emphatic as I could desire; I never said I could explain how they are the causes: I cannot conceive how the phenomena of consciousness are to be brought within the bounds of physical science,"[5] and so forth. He grants that states of consciousness are brought into existence by molecular changes. Yet, for all that, you must not say that he teaches Materialism, because he cannot explain the process. Why, who *can* explain the process by which light becomes heat, or heat becomes electricity? And who is thereby hindered from asserting that heat, light, and electricity are in their nature physical, not psychical? It is a question of the nature of things, not of explaining the process by which one produces another. If, in fact, molecular changes do produce states of consciousness, be the process what it may—so long as it does not bring in a new non-physical cause—we are necessarily landed in Materialism. Now with all possible deference for Professor Huxley's knowledge of his states of consciousness, I must stick to my text that this very Materialism is contained in, and follows by strictest deduction from, his printed

(1) *Science and Morals*, p. 792. (2) *Ibid.* (3) P. 793.
(4) P. 797. (5) P. 789—90.

statements. Will he repeat that he never meant it? He must permit me in reply to repeat that I am concerned not with what he meant, but with what his words mean, with the message, not with the messenger. Let us turn to his words.

Professor Huxley declares, "If there is anything in the world which I do firmly believe, it is the universal validity of the law of causation."[1] Now here I find reason for regret that we are not proceeding after the manner of mediæval disputants. If we were, I should at once ask him to define "the law of causation;" scholastic formalism always recommends such definitions to be given when possible. In the absence of any definition of the law of causation from Professor Huxley, it will not, I feel confident, be deemed by him excessive if I describe that which calls something into existence as the cause of that which it calls into existence. Well, then, in Professor Huxley's article I find these words: "the phenomena of consciousness as such, and apart from *the physical process by which they are called into existence.*"[2] Here we have "physical process" as the cause, and "the phenomena of consciousness" as the effect. But physical process is merely another name for "the molecular changes propagated from the eye," or any other organ "to a certain part of the substance of the brain," and these changes are due to "vibrations of luminiferous ether,"[3] or whatever the medium may be. The "process of physical analysis" takes us backward to matter and force on the one hand, forward to "the phenomena of consciousness," "called into existence" by physical process, on the other. And, as we have seen, Professor Huxley, if he believes anything, believes in the unbroken sequence by which the "process" stands to "the phenomena of consciousness" in the relation of cause and effect. Is it unwarranted, then, in his readers to conclude that in the last analysis "the phenomena of consciousness" must "be explicable by deduction from the properties assignable to matter and force?" And what is this but Materialism as defined by Professor Huxley himself?

Again, Professor Huxley holds "that it would be quite correct to say that material changes are the causes of psychical phenomena."[4] "Psychical phenomena!" Surely it is what Polonius would call "an ill phrase." Can it be other than misleading to apply such a term as "phenomena" to the things of the mind, to its activities, or the exercise of them? For they do not appear in any proper sense of the word; they exist without appearing, and so should, in strict logic, come under Professor Huxley's canon: "De non apparentibus ut de non existentibus, eadem est ratio."[5] I do not press this point,

(1) P. 790. (2) P. 790. The italics are mine.
(3) P. 790. (4) P. 797.
(5) See his most suggestive article on *The Hypothesis that Animals are Automata*, published in this Review in November, 1874. "In the matter of consciousness, if in anything," he there remarks, "we may hold by the rule, 'De non apparentibus ut de non existentibus, eadem est ratio.'" P. 565.

although it is important. I merely throw it out, in passing, for Professor Huxley's consideration. The matter just now in hand is the Professor's proposition that "material changes are the causes of psychical phenomena." Is it, as he asserts, "quite correct" to say this? I am afraid I must answer after the manner of a mediæval disputant and say *Distinguo*. What does Professor Huxley here mean by "cause"? Does he mean that material changes bring "psychical phenomena" into existence without the intervention of any other cause which is not a material change? If he does, assuredly there is an entirely adequate justification for dubbing him a Materialist; the very head and front of Materialism is to maintain that what is merely matter and force can produce that which is neither matter nor force. Or does he allow that a psychical immaterial cause must intervene? In that case his material change is not a cause, but, at the most, an occasion, which two, I would observe, in my character of mediæval disputant, are not precisely the same thing. And what an amazing illustration Professor Huxley has chosen to elucidate his meaning! "The man who pulls the trigger of a loaded pistol placed close to another's head certainly is the cause of that other's death, though in strictness he 'causes' nothing but the movement of the finger upon the trigger. And in like manner the molecular change which is brought about in a certain portion of the cerebral substance by the stimulation of a remote part of the body would be properly said to be the cause of the consequent feeling, whatever unknown term were interposed between the physical agent and the actual psychical product." [1] That is to say, a series of physical changes, beginning with the movement of the finger on the trigger, shows us exactly how molecular changes may produce, not physical effects co-ordinate with their activity, but "psychical phenomena," which are absolutely incommensurable with it! I hope Professor Huxley will not accuse me of "a damnable iteration" if I again ask, Has a psychical cause interposed? Then, the illustration is nothing to the purpose; it does not illustrate; and to employ the word "cause" for the mere material antecedents is to throw dust in our eyes. Has none interposed? Then how can Professor Huxley complain of those who dub him a Materialist? If pulling a trigger produces death, exactly as a physical change in the brain produces thought, and *vice versâ*, it passes my wit to see how Professor Huxley, in maintaining this, is to be differentiated from Dr. Büchner, who holds just the same thing.

Once more, Professor Huxley maintains that "consciousness, in certain forms at any rate, is a cerebral function." [2] The statement is more guarded than one which was put forward by him some years ago in quelling Mr. Darwin's critics. He then contended that as

(1) *Science and Morals*, p. 797. (2) P. 796.

electric force and light waves are expressions of molecular changes, "so consciousness is, in the same sense, an expression of the molecular changes which take place in that nervous matter which is the organ of consciousness."[1] So in writing in this Review in November, 1874, he laid it down that "the consciousness of brutes would appear to be related to the mechanism of their bodies, simply as a collateral product of its working." And it is quite clear from the whole of the paper in which these words occur that he does not allow of any difference in this matter between men and the brutes, as to which I quite agree with him. I do not know the precise object or value of the limiting words which he now uses: "in certain forms, at any rate." I take it that we may fairly credit him with the proposition, which, indeed, he appears to grant, that "consciousness is a function of the brain." And what does he mean by function? He replies, "We call function that effect, or series of effects, which results from the activity of an organ."[3] Very well. We will take that definition. And now let us go a step farther.

To Professor Huxley the whole of man, except his body, consists of "states of consciousness."[4] So much is clear. To talk of a personality which underlies those states, or exists in them, appears to him a return to an "effete mythology."[5] Consciousness is the man, so far forth as he is man and not mere dead matter. Therefore it is no exaggeration to say that on this theory the brain makes the man—that man is the result of brain, or a cerebral function. And what is the brain except a little grey matter in a certain degree of complexity? Shall we be told that consciousness is simply the product of the activity of a material organ, and at the same time be forbidden, under pain of the strongest anathema which "the proprieties permit," to call this doctrine Materialism? What is Materialism if this is not? Nay, nay, says Professor Huxley, not so fast; in that sense, we are all Materialists. "We are all agreed that consciousness is a function of matter, and that particular tenet must be given up as a mark of Materialism."[6] And he imagines me to meet his parallel, drawn from the production of muscular motion, by conceding that "no physiologist, however spiritual his leanings, dreams of supposing that simple sensations require a 'spirit' for their production."[7] Professor Huxley must pardon me. That would not at all be my way of rejoining. What physiologists hold I am not just now concerned to ascertain. But psychologists also deal with simple sensations, and I am quite sure that I am not the sole survivor of the school which perceives a difference between dead and living muscle, which attributes the state of consciousness called pain to living and

(1) *Contemporary Review*, vol. xviii. p. 465. (2) *Science and Morals*, p. 796.
(3) P. 797. (4) *Lay Sermons*, p. 327. (5) *Science and Morals*, p. 796.
(6) P. 797. (7) P. 797.

not to dead muscle, and which, therefore, affirms in living muscle the existence of an immaterial vital principle—in short, of "spirit," the absence of which it is that makes dead muscle, and renders pain impossible in such. Sensation, however simple, appears to me to be not a physical fact, not a nerve fact, but a mental fact. *Pace* Professor Huxley, we have not yet quite "done with that wholly superfluous fiction." Still less have psychologists conceded that a fiction it is. I certainly cannot allow that animal life, constituting certain states of consciousness, is due to a material organism in which nothing immaterial resides. Is this "immaterial" to be called "spirit"? Why not?

As little, or rather much less, can I allow that he does not teach Materialism who makes thought simply a function of the material brain, instead of asserting that the brain is at most[1] the instrument of thought, and supposes in a man a thinking principle, which it cannot and does not constitute. Materialism this certainly seems to me to be, and of the crassest kind. I can no more believe it than I can believe that the woodman is a function of his axe, and that the axe is not the woodman's instrument. If thinking man is the result of the activity of a little grey matter, then assuredly Dr. Büchner,[2] whether or no he represents physical science, will represent the only valid metaphysics, for the brain, physically considered, is matter and nothing but matter. Allow it to be the material antecedent, and the only cause which "calls into existence" "states of consciousness," and how can the conclusion be avoided that thought is the product of matter and force? If material changes are the causes, true and sufficient, of "psychical phenomena," are not these "phenomena" products of matter? Where will Professor Huxley introduce Idealism in the process? Nowhere in the process, but only in the result. Is that not precisely what the Materialist does? He starts from matter and gets to mind, and there is no break in the chain. Consciousness is to be, at any rate, "a collateral product" of nerve changes. If so, does it not originate in nerve matter?

I come now to the famous passage quoted in my article, "*Materialism and Morality.* "The progress of science means the extension of the province of what we call matter and causation, and the concomitant gradual banishment from all regions of human thought of what we call spirit and spontaneity."[3] Professor Huxley does not see what this has to do with Materialism. Really? Nor, I suppose, has it anything to do with Materialism that he once more

(1) See my article, *Materialism and Morality*, p. 593, *note*.

(2) Let me, in passing, correct another strange mistake of Professor Huxley's. He writes (p. 794), "Dr. Büchner, whom Mr. Lilly appears to consider an authority in physical science." I cannot conceive how this "appears," for I have never said it, nor in any way implied it.

(3) *Lay Sermons*, p. 142.

asserts that "all the so-called spontaneous operations of the mind" are "connected in natural series of causes and effects" with "physical phenomena,"[1] the latter being causes and the "so-called spontaneous operations" effects of them? Well, if what we call matter and energy really is what we call it, and is not another name for mind, then the extension of its province to all regions of thought should signify that in course of time all "phenomena," mental as well as material, will be included under matter and energy. But I may be reminded that Professor Huxley, in discoursing to the "Christian Young Men" of Cambridge, told them "It is an indisputable truth that what we call the material world is only known to us under the forms of the ideal world, and, as Descartes tells us, our knowledge of the soul is more intimate and certain than our knowledge of the body."[2] Yes; certainly Professor Huxley is the author of both of these statements, one of which banishes soul and spirit and makes matter supreme, the other of which reduces matter to a mental state, and gives mind the supremacy. If we are to follow him in his lecture on Descartes, the progress of knowledge should mean the extension of the province of that we call "soul," and which is likewise called spirit, mind, personality, to all regions of human thought, and the ideal transformation of what we call matter and force. But, as we have just seen, Professor Huxley maintains the opposite of this also, and makes the progress of science identical with the triumph of matter. Are we to describe him as an Idealist on the strength of one passage, or as a Materialist upon the strength of the other? or must we say that when he is not a Materialist he is an Idealist, and *vice versâ*? There is manifestly something here which requires clearing up. Even at the risk of being accounted no better than a mediæval disputant, I venture to say that one of the two passages must go; no compromise between them is possible.

That, however, is a matter for Professor Huxley. I proceed to note his dictum that "the growth of science, not merely of physical science, but all science, means the demonstration of order and natural causation among phenomena which had not previously been brought under those conceptions."[3] Now, if Professor Huxley were a mediæval disputant and had "posted up" this thesis, I should vehemently desiderate from him a little definition. What does "order" mean? What is "natural causation"? If, as I suspect, "natural" is here equivalent to physical, Professor Huxley implies that the growth of science—of "all science"—consists in the reduction of mental problems to those of matter and force—in short, to mechanics and the expression of "consciousness" in foot-pounds. But if "natural causation" may be hyperphysical (I beg of Professor Huxley to note

(1) *Science and Morals*, p. 798. (2) *Lay Sermons*, p. 340.
(3) *Science and Morals*, p. 798.

the word) as well as physical, does this establishment of it imply necessarily the extension of the province of matter and force? These are important questions, and as a perplexed reader of Professor Huxley's writings I should be grateful for a little light upon them, if the Professor is in a condition to radiate it. As for the word "order," is there any reason why a mental or a spiritual order should not exist over and above a physical order? And again we may ask, in no spirit of impertinent curiosity, how will it extend the sway of matter and force to enlarge our conception of mental, or spiritual order, distinct from physical?

Moreover it must not be forgotten that Professor Huxley, who distinguishes for the moment between "physical science" and "all science," has written elsewhere, "If there is one thing clear about the progress of modern science, it is the tendency to reduce all scientific problems, except those which are purely mathematical, to questions of molecular physics—that is to say, to the attractions, repulsions, motions, and coordination of the ultimate particles of matter."[1] Let him bear with me if I ask him whether mental problems—problems of consciousness—are scientific or not? If they are, then the clear tendency of modern science—approved, as is manifest, by Professor Huxley—is to reduce them to problems of molecular physics, which, truly, if it could be done, would make the empire of matter and force universal. Nor is there any other way of banishing "spirit and spontaneity" from human thought. But to take the other alternative, will Professor Huxley say that problems of consciousness are not scientific? In various parts of his paper in the December *Fortnightly* he insists, with indignant emphasis, that he does not pretend to bring "the phenomena of consciousness within the bounds of physical science." Therefore, it would seem they are not scientific at all; for as he has told us, in words just now quoted, it is the tendency of modern science to bring "*all* scientific problems" within those bounds. Grant them not to be "scientific," and how will the province of matter and force be made to include them? In no way; and then there will be a limit to the extension of that province: it will never become conterminous with all regions of human thought. It would be like the lifting of a fog if Professor Huxley would tell us which of the foregoing alternatives he proposes to defend. Is psychology a science? Is it reducible to molecular physics? Is not such a reduction tantamount to Materialism? Is every problem, transcendental and other, to be solved by the methods of physical science? Or are there regions of human thought where physics cannot find an entrance? For if there be, in such we may find room for spirit—nay, perhaps, even for "spontaneity." At any rate, universal

(1) *Lay Sermons*, p. 166.

"causation," reducible to the pullings and pushings of the final particles of matter, will have to be given up, or Materialism, of which this doctrine is the expression, must be accepted.

Professor Huxley, however, identifies the growth of science with the extension of "natural causation," and he fully acquiesces in the tendency to reduce "all scientific problems" to those of molecular physics. Is it misrepresenting him, then—the writer, I mean, not the inner consciousness of the individual man—to assert that he "puts aside as unverifiable everything which cannot," by some process or other, "be verified by the senses?" Again, it is his opinion that "as surely as every future grows out of past and present, so will the physiology of the future gradually extend the realm of matter and law, until it is coextensive with knowledge, with feeling, with action."[1] It appears, then, that to extend the realm of matter and of law is one and the same thing. Matter, law, order, universal causation—to say one is to imply the rest. But it is the senses which deal with matter. If there is nothing beyond matter, there is nothing "which the senses cannot verify," nothing "beyond the bounds of physical science," nothing "which cannot be brought into a laboratory and dealt with chemically." If the problems of consciousness lie under the jurisdiction of physical science, *ipso facto* they are subject to the laws and tests of molecular physics. How is it misrepresenting Professor Huxley to debit him with the conclusions of his own premises?

But the Professor is indignant to an extent which the proprieties do not allow him adequately to express. Does Mr. Lilly mean to tell me, he asks,[2] that my intellectual convictions, my æsthetic or logical faculty, my delight in the fine arts, lie within the bounds of physical science, or are verifiable by the senses, or can be tested chemically? Do *I* mean to tell him so? God forbid! It is *he* who, to be consistent with the enunciations which I have quoted from him, should tell me so. I am very well aware that the senses, on which the science of molecular physics is founded, know nothing of "style and syllogisms," and I believe they know as little of the "keen perception of the beauty offered us by nature and by art." Neither is it by the senses that we verify the truths of mathematics, of philosophy, of history. But if these are truths belonging to the "regions of human thought," then the gradual extension of "order" and "natural causation" should, according to Professor Huxley's dictum, bring them one day into the province of physics. Is not "the realm of matter and law" to "become coextensive with knowledge, with feeling, with action"? Then it will, when spirit has been put to the ban, include such things as the binomial theorem, and the truth in any given history of Rome. For are not these pro-

(1) *Lay Sermons*, p. 142. (2) *Science and Morals*, p. 789, *seq.*

ducts of that "consciousness" at a "mechanical equivalent" of which, Professor Huxley tells us, we shall sooner or later arrive, "just as we have arrived at a mechanical equivalent of heat?" The Professor deems these conclusions extremely absurd—"preposterous" is his word. So do I. But what, if they flow from his premises about the reduction of scientific problems to those of molecular physics, and the identification of law with matter, and of both with knowledge, feeling, and action?

Professor Huxley inquires whether any human being puts aside as unverifiable everything which the senses cannot verify. He makes good play with the question, repeating it, in divers forms, with brilliant effect, which shows that his right hand has by no means forgotten its cunning. His is one of those opulent and puissant natures that age cannot wither, nor custom stale their infinite variety. Will he suffer me, for clearness' sake, in answering his question, to speak once more after the manner of a mediæval disputant, and to say, *Distinguo*. That no human being puts aside *in fact* everything that the senses cannot verify, I allow, or rather, maintain. But all human beings do so *in theory* who are of the school of Sensationalism or Materialism. I was not discussing in my paper what Professor Huxley does, for he does what we all do: his daily life is ordered and governed by a great number of certitudes which the senses cannot verify. No. I was rehearsing what he had said, and was pointing out that it involved, and so far as I could understand, expressed, a theory which forbids us to accept as true or certain whatever lies outside the bounds of physical science—whatever, therefore, cannot be brought into a laboratory and dealt with chemically. I did not say that Professor Huxley's mind is Materialistic—it is too richly endowed, as I expressly recognised,[1] to be dominated by "Pig-philosophy"—but that his theory is. And I say so again, with the full knowledge that he has often employed language diametrically opposed to Materialism, and that he may, in a true sense, be regarded rather as the candid friend than the irreconcilable enemy of the Higher Theism. I say that the passages from his writings which I have brought forward, either have no definite meaning, or else contain the doctrine that matter gives rise to mind by a process of natural causation, in which the series of causes and effects is unbroken; in other words, where there are physical causes at the beginning of the chain and mental effects at the end of it. And I call that doctrine Materialism.

So much as to the main point at issue between Professor Huxley and myself. But there are yet some things to be said before my explanation will attain that completeness which I desire it to possess. The Professor tells us that he heartily repudiates "the doctrine of *Kraft und Stoff*—force and matter—as the Alpha and Omega of

(1) See my article, *Materialism and Morality*, p. 577.

existence, the fundamental article of the faith Materialistic;" [1] and that for witnessing against it he has suffered reproach as being "retrograde" and even—*horresco referens*—"an obscurantist." [2] Moreover he reiterates what he has said, "not once but constantly," on the impassable gulf which divides neurosis from psychosis. How are we to reconcile these strong convictions and arguments with what I have quoted from him, and with a large number of other passages to the same effect which I have collected from his writings, but which the time would fail me to transcribe? If Professor Huxley agrees with Professor Tyndall that there is "an impassable gulf," how can he attribute the causation of psychosis to neurosis, which we have seen him do repeatedly when stating that "molecular changes are the cause of psychical phenomena"? A gulf which may be traversed by causation ceases to be an "impassable gulf;" we must employ another metaphor and speak of the links in an unbroken series of causes and effects. When neurosis calls psychosis into existence the gulf is thereby bridged. But we shall be told, the process remains inscrutable. The answer to that may be given in four words: Every process is inscrutable. We do not know the *how* of a single causal nexus. The question therefore remains, on what ground can a writer, of good faith as indubitable as his intellectual power, who makes mind the product or result or effect of molecular changes, decline to be ranked as a Materialist?

The probable solution of this grave difficulty lies, as I have already indicated, in Professor Huxley's announcement that he believes in the relativity of our knowledge. He prefers to speak "of what we call matter and energy," "what we call psychical phenomena." He is perhaps of opinion that the doctrine of relativity makes Materialism impossible, and Idealism too. So it does, in an *absolute* sense; but so it does not in a *relative*. It reduces all our knowledge to an acquaintance with phenomena, doubtless; it leaves intact, however, the problem, which set of phenomena gives rise to the other, which calls the other into existence, or which we should account causes, in a relative sense, and which effects. But in its influence on the social order, on morals and life, a relative would be no less disastrous than an absolute Materialism. For the mass of men are not metaphysicians, and to them the distinction between relative and absolute can have no meaning. A sensualist is willing to indulge himself "phenomenally" and "relatively," if he finds the effects agreeable, precisely as under former systems of thought he might have done so "absolutely" and "really." The change of name can make no difference. And thus *Physicus*, in his well-known book,[3] when he has considered "the bearing on Materialism of the simple doctrine of Relativity," concludes, "Here we saw that Materialism was only

(1) *Science and Morals*, p. 794. (2) P. 796. (3) P. 187.

affected to the extent of being compelled to allow that what we know as matter and motion are not known in themselves." "But," he goes on to say, "we also saw that as the inscrutable realities are uniformly translated into consciousness as matter and motion, it still remains as true as ever that *what we know* as matter and motion may be the causes of what we know as mind." In like manner, with reference to the late Professor Clifford's dictum that a "moving molecule of inorganic matter does not possess mind or consciousness, but it possesses a small piece of mind stuff," *Physicus* remarks that if it be true, "then assuredly the central position of Materialism is shown to be impregnable." Now *Physicus*, however we may account of him, is not tainted with the suspicion of scholasticism. Consider, again, Mr. Spencer's teaching upon the relativity of knowledge and the persistence of force. What is its outcome but the doctrine of self-existent matter? Take his own statement: "Clearly, therefore, the proposition that an 'originating mind' is the cause of Evolution is a proposition that can be entertained so long only as no attempt is made to unite in thought its two terms in the alleged relation."[1] But of course Mr. Spencer does not "post up" Materialism in the absolute sense of the old and naïve Realists. My point is, however, that the multitudes of men are and must be naïve Realists, and that they are taking the Materialism of Mr. Spencer, Professor Huxley, and Mr. Clifford *au pied de la lettre*, with the consequences which I have endeavoured to depict in my article *Materialism and Morality*.

It is not, therefore, on the score of language merely, nor by singling out isolated passages, not, assuredly, for the sake of controversy, for which I have neither aptitude nor taste, but because, on taking all the evidence into account, I deemed it so, that I spoke of Professor Huxley's writings as tending to elevate Materialism into the reigning creed of the day. It might be feasible to show that various authors, to whom no one would attribute Materialism, have used unguarded or equivocal expressions; but it is not by reason of such that, when all is said and done, I feel obliged to maintain my former position, adding of course that, neither then nor now, have I dreamt of penetrating into the depths of Professor Huxley's consciousness. He appears to think the combination of Phenomenist and Materialist impossible. It seems to me that between these two forms of negation there is a natural affinity. The Materialist denies mind altogether, or makes it a function of matter; the Phenomenist denies that faculty of intuition which is the essential characteristic of mind, and in calling mind a phenomenon breaks down the distinction that severs it from those material entities which really are phenomena. I do not think Professor Huxley escapes from the

(1) See the whole passage in his *Essays*, vol. iii., pp. 246—249, 1874.

Materialism which has been called, most unwarrantably, "The Creed of Science," by adopting the doctrine of the relativity of knowledge. Shall I appear to him no better than a mediæval disputant if I say that this seems to me to be merely adding a second error to the first?

"The Creed of Science." "The relation of science to morals." Employing the term physics, as less open to ambiguity, I am here brought back to what I said at the beginning, that physics, as such, is not conversant with morals, neither affirms nor denies religion, and can therefore have no creed in regard to either. We do not talk of the religion of the sense of hearing, nor of its irreligion; such an expression would be absurd. In like manner physics, which is wholly the science of the senses, abstracts from religion, from morality, and from every kind of knowledge so far as the latter is independent of sense. I say "abstracts from," I do not say "rejects," or "repudiates," or "denies." Physical science merely attends to its own business, and it is no part of its business to deal with what the late Mr. Lewes denominated the "metempirical." It is not Agnostic, for Agnosticism implies a knowledge of one's own ignorance; and physical science does not know that it is ignorant, any more than a mollusc knows that it is not moral. It is wonderful how much has been made out to the prejudice of religion as of morality, from the obvious canon of logic that, every science having its proper object, the proper object of physics does not include God or the moral order. Science, all science, has on the strength of this been described as hostile to metaphysical principles, to belief in a Personal Deity, and to an *à priori* standard of ethics. Hostile, physical science is not; indifferent, it is and ought to be. Professor Huxley asks, In what laboratory questions of æsthetics and historical truth can be tested? In none, as we both agree. But it is curious that he should think of safe-guarding morality by means of that science which cannot even attain to the laws of historical criticism. He will, perhaps, assure me that I mistake him again. Well, I do not mistake in asserting that he considers physical science "a better guardian of morality" than "the pair of shrews," philosophy and theology. I will say what strikes me on that point, and so conclude this paper, which has extended far beyond what I proposed to myself when I began to write it. But whether one agrees with Professor Huxley or disagrees, his pages are so fascinating that it is difficult to tear oneself away from them.

The morality of an act, we must all surely admit, is not a physical quality; it resides in the motive, and again in the nature of the act; whether, namely, the latter is conformable to a standard of perfection which the mind alone apprehends. The outward effects of two actions may be precisely similar, as when an assassin slays his victim and an exe-

cutioner hangs a convicted criminal. But one of these acts will be foul murder; the other a righteous ministration of retributive justice. Will Professor Huxley point out any science which is not a part of philosophy or theology, and is yet competent to discriminate between these two acts? What can "science" affirm about them unless it becomes philosophy or theology? Nothing whatever. Physical science perceives only that which the senses grasp; and the senses know nothing of justice or injustice. Is it by physics that we know when social disorganization is the consequence of immorality? I trow not. To physics the deeds of a Wellington and of a Genghiz Khan are "molecular changes," and no more. Physical science may predict that if certain physical actions take place, certain physical structures will be injured or broken up. But it can never tell what is the moral quality of those physical actions. The taint of leprosy may be contracted by vicious habits, or in the exercise of sublimest self-sacrifice. But can "science" inform us whether Père Damian, in his fearful prison at Molokai, has contracted it because he is good or because he is evil? Therefore, I must affirm, that while physical science may be, and ought to be, the servant of morality, it can never, in any proper sense, be its guardian. The only effective guardian of morality is religion, which affords it a sanction and a reward, which incarnates it in august symbolism and utters it in divine command for all those—they are, and ever must be, the overwhelming majority—who cannot lay hold of an abstruse philosophy, but need to be taught as children. Physical science may indeed mark the difference, which in time becomes outward and visible, between those who cultivate morality and those who trample it under foot. But there its competency stops; its powers of interpretation are exhausted. What lies at the root of the difference it can never tell. It has no means of discerning virtue or vice, and to intrust the age to its guidance would be like asking one's way of a blind giant. That he was a giant would be no compensation for his want of sight; and, if he thought himself all the more at liberty because he perceived no hindrance to his action, so much the worse would it be for those whom he dragged along with him. I have applied the parable in the paper which Professor Huxley has criticised. Physical science, apart from philosophy and religion, is indeed a giant, but it is blind. And when it proceeds unscientifically to formulate its ignorance into a creed, it is doing its best not to subserve morality, but to ruin it.

W. S. Lilly.

THE TRANSCASPIAN RAILWAY.

Among the gigantic lines of communication which have recently been constructed, in defiance of extraordinary difficulties, the Transcaspian Railway does not take the highest place as regards the distances it traverses; though, as regards its strategical, commercial, and civilising importance, it may compete with the great lines of Europe and America. When we take into consideration the comparatively short time occupied in the construction of this line, we cannot but be surprised at the way in which technical difficulties have been overcome. A country destitute of water and consisting of treeless wastes of sand, presented difficulties as great as did the subjugation of wild and rapacious nomads; and one who, like myself, compares the present condition of Central Asia with its recent and remembered past, and reflects on the vastness of the change, must regard with special interest the construction of the Caspian Railway.

It is almost a quarter of a century since I sat on the bank of the Etrek, in front of the tent of Kulkhan, and looked on the blue outlines of the distant masses of the Kubbet-Dag. As I gazed unpleasant thoughts arose in my mind, for in that direction, so I had heard, dwelt the Tekké Turkomans, famous for their ferocity, their power, and their riches. In that direction, I had been told, lay the territory of Akhal, beautiful as paradise, where, according to my Yomut hosts, every house had seven streams, where riches and blessings of all sorts were lavishly bestowed on the dwellers of every tent, where man through the excess of his prosperity became presumptuous and careless of those duties towards God, which still occupied the Yomut Turkomans struggling with the sandstorms of the naked desert. At that time some feeble attempts were made to bring about a reconciliation between the wealthy inhabitants of Akhal and the Djafar-Bai-Yomuts. I conducted the diplomatic negotiations, both writing and reading the correspondence on the subject, but the reconciliation remained a *pium desiderium*, as at that time no one from the banks of Etrek dared to enter the Akhal territory.

To-day all is changed as if by enchantment. There, where my camel, coughing as he went, once dragged his weary limbs through the deep sand, and shook every bone in my body with his abrupt movements, now rushes the steam-horse, snorting and puffing. Shifting sands, and shifty Turkomans, have either disappeared or been forcibly fastened to the ground. A magical iron band bridges over all difficulties, all irregularities, and where distances used to be measured by

the months of the camel-driver they are now measured by the hours of the engine-driver, and will soon be set down in Hendschel or Baedeker. It is no wonder therefore that I am especially interested in the Caspian Railway, and feel myself qualified to give a slight sketch of its origin and importance.

It is well known that Russia as early as the days of Peter the Great cast her eyes towards the east and west of the Caspian Sea. Those who ruled on the Neva kept their goal ever before their eyes, namely, the extension of their dominions from the banks of the Volga far into Central Asia, even to India itself. They were, however, unable to take steps towards the realisation of their projects before the first decade of the present century. The mission of Muravieff from the Gulf of Krasnovodsk to Khiva, the journey of Karelin and Blavemberg, to the last-named of whom we owe the earliest exploration of the eastern shores of the Caspian, were certainly but modest attempts to dissipate the thick clouds of ignorance which then concealed both the land and people of ancient Hyrcania from the knowledge of the civilised world. It was not till after the conquest of Khiva and the occupation of Krasnovodsk and Tchekishlar that some gleams of light became discernible. These gleams were certainly at first utilised for merely political purposes, that is, for the subjugation of the Turkomans. As time goes on, however, this increase of our knowledge will serve—indeed even against the will of the Russians, must serve—the cause of universal commerce and the civilising mission of the West. If the expedition of Generals Lomakin and Lazareff had not failed, if hundreds of Russian soldiers had not succumbed to the horrors of the desert between the coast and Kizil Arvat, it would have been long before the railway would have been begun. But Skobeleff saw from the very first that the resistance of the Turkomans was to be overcome, not so much by the force of Russian arms as by increased facility of communication; and, as he had the good fortune to find in General Michael Nicholaievitch Annenkoff a colleague whom no difficulties or dangers of the undertaking could discourage, the construction of the line was begun in 1880, and has by this time been carried up to the banks of the Oxus, whence it is to be continued as far as Samarkand, a distance of 1335 versts. The starting-point of the line caused the most serious embarrassment. Krasnovodsk could not be selected on account of the steep hills by which it is surrounded. The bay of Mikhailovsk, lying to the south-east of Krasnovodsk, was not open to that objection, but the shallowness of the harbour was a serious impediment to the approach and unlading of vessels. Almost the whole eastern coast of the Caspian presents the same difficulty. I myself was obliged to wade for nearly an

hour through the shallow water before I could reach the shore from the miserable Turkoman boat in which I had arrived from Persia. Consequently I can easily imagine the difficulty of unlading a large steamer at that point, to say nothing of disembarking a whole army. In order to improve its accessibility from the sea, the Russians were obliged to place the head of the railway twelve versts to the west of Mikhailovsk, on the shore of the island Usun Ada (Long Isle), in a spot where the depth of the water was twelve feet, thus avoiding the difficulty of repeatedly unloading and reloading, as also the danger of running aground. The voyage from Baku to Usun Ada occupies from eighteen to twenty hours. At first you steer in the direction of Krasnovodsk, and then turn by the island of Rau in a south-easterly direction in order to pass by the islands of Gözüklü and Kör Djemil, and so arrive at Usun Ada. Even this course is only kept open by means of frequent dredging at more than one point, and there is a further source of anxiety, the bay may be frozen over—a by no means impossible contingency—and thus communications may be temporarily suspended. And though this difficulty might be remedied by breaking the ice, as is done on the road between Finland and Sweden, still there remains here a precarious link in the long chain between Russia and her Central Asian dependency. Doubtless mechanical contrivances will ultimately diminish these difficulties, but they can hardly succeed in entirely removing them.

Passing to the enormous technical difficulties connected with the construction of the railway, we must lay special stress on the fact that the obstacles, which required the greatest labour to overcome, were the sandy steppes. These we may divide into two parts. The first reaches from the coast as far as Ashkabad, about two hundred versts in length, and the second from Merv to Tchihardjui, about two hundred and thirty-two versts in length. The remaining portion of the road over the Oxus as far as Samarkand passes for the most part through a well-cultivated and tolerably level country without any particular technical difficulties. With regard to the two above-mentioned difficult portions of the line, from Mikhailovsk to Kizil Arvat, we will only briefly touch on the obstacles with which the constructors had to contend. First of all there was the want of water, not only for the labourers but also for the garrison. This was met by the so-called sweet-water machines (condensers) which furnished daily from five thousand to six thousand vedros of water. As the making of the line progressed, the water was sent after the labourers by rail. Next, there was the complete absence of any labouring population on the spot. Labourers had to be brought from the interior of Russia, from different parts of the Caucasus, and even

from Persia. Besides this, the whole of the building materials, sleepers, rails, nails, posts, &c., had to be brought all ready for use piece by piece from the interior of Russia. Furthermore the long stretches of shifting sand over which the line had to pass caused indescribable difficulties. Even now I shudder as I remember the feeling of having no solid ground under my feet, which oppressed me in my passage over those beds of shifting sand, which were in some places from 150 to 200 feet high. In order to lay the sleepers to any purpose, the Russians had first to bring up sea-water with which to water the sand, and then to lay down clay brought from the steppes; and it was only after they had in this way formed an artificial foundation that they proceeded to put down the sleepers and fix the rails. I will not dwell upon the excessive heat of the climate. Although the Russians occasionally experienced favourable weather, I do not forget that it was just in this part of the steppe I felt the most infernal heat; and Colonel Markusoff, ten years later, on his unsuccessful expedition to Khiva, registered 55° Réaumur above zero. Nevertheless, the line was made in spite of all these hindrances as far as Ashkabad, and from that point the continuation of the line to Merv was begun in January, 1886, and carried on with a rapidity unexampled in the annals of railway construction. To be sure the line may be said to have made itself, for as it advanced, sleepers, rails, and other materials were pushed forward four or five versts ahead on small trucks by means of Decauville's movable rails. We must besides take into consideration the enormous number of labourers employed by the Russians. Besides three or four battalions of Russian sappers, about two thousand Persians and eighteen or twenty thousand Turkomans, Bokhariots, and Khivans, in all about twenty-five thousand men, according to the account given by Russian journals, were at one time employed to build this road for Russian ambition and land-hunger into the heart of Central Asia. At first it was proposed to build the railway exclusively with Russian labour. This plan, however, broke down. Accustomed to a different climate and to different food, the Russian labourer was not able to do his usual amount of work on the borders of the steppes and the northern slopes of the Persian mountains. The light-limbed natives of Central Asia proved much better fitted for the work. Provided with a small bundle of clothes, they flocked from distant regions, nourishing themselves for days together with rice, melons, and vegetables. Accustomed from their youth up to work on embankments and dig canals for agricultural purposes, they proved very apt navvies. At first full of suspicion towards the powerful but detested unbelievers, the Ozbeg, the Tadjik, the Turkoman, the Kurd, and the Persian soon learned by experience that, unlike their native masters, the

"Urus" paid with hard cash, while the proverbial temperance and sobriety of the Central Asiatic enabled them to carry home their savings. Divided into detachments and superintended by mounted officers, the workmen were summoned to work after morning prayers by the sound of the drum; the sound of the drum announced the times for meals and repose, and in the evening the end of the day's work.

As the last, but by no means the least, difficulty must be mentioned the entire want of fuel for the locomotives. Years ago, when the idea of establishing steam communications by land and water in those regions was first discussed, it was proposed to replace coal, which is not found on any of the shores of the Caspian, by the trunks of the sazaul (*Haloxylon Ammodendron*). This plan, however, did not prove feasible. The wood of this shrub throws out an intense heat and burns for a long time, but it is much scarcer on the Hyrcanian steppe than on the right bank of the Oxus, and during the time it was used its very bulk proved a source of embarrassment to the steamers on the Sea of Aral. Seeking to remedy this inconvenience, the Russians were so lucky as to find an efficient substitute in the abundant springs of naphtha on the eastern as well as on the western coast of the Caspian. As far as the springs on the western coast are concerned, Baku has already obtained a worldwide reputation; and the colossal, the fabulous, abundance of the naphtha that here bursts out of the earth is not only sufficient to furnish the by no means inconsiderable fleet on the Caspian with fuel, but has made petroleum an article of export from Russia to the whole of Eastern Europe, where it successfully competes with the American supply. The springs of naphtha to be found on the eastern coast are not less numerous and productive. This is especially the case with those situated to the south-east of the Balkan Mountains, where, on my journey to Khiva, I was once in danger of sinking, together with the whole caravan, in a naphtha morass. The earth quaked under our feet, the camels groaned, my travelling companions lamented, and the horrors of the night, pitch dark as it was, and the pungent odour of the naphtha, are still vivid in my memory. Now it was just this naphtha region which the Russians turned to account by obtaining from it fuel for the locomotives on their Transcaspian Railway. From the station of Bala Ishem a line of rails on the Decauville system runs for about thirty-five versts to the neighbouring naphtha springs, where, now that regular borings have been undertaken, five large cisterns, each eighty-five fathoms deep, have been opened. These supply daily five thousand poods (about eighty-two thousand kilos) for the service of the railway, for lighting, warming, and even for the bakeries. The locomotives are heated with naphtha refuse, called in Russian *astatki*. The stations are lighted with kerosene, which is even employed in private houses in place of

candles. At every station our stores of coal are replaced by piles of large casks and similar vessels, full of this combustible or ready to be filled with it. When we take into consideration the extraordinarily productive character of the naphtha springs, we shall see that not only is there no danger of the railway service being stopped from want of fuel, but that the heating of the furnaces will cost less than in the richest coal-bearing district.

Taken all in all, as soon as the obstacles presented by the first two hundred versts had been overcome and the line had been made as far as the cultivated oasis of Akhal-Tekké, comparatively few difficulties awaited the constructors of the railway. It could then be carried with tolerable ease from Ashkabad, through Geurs, as far as Artik, and from thence, in spite of an intervening tract of barren steppe, as far as Dushakh. This last is a Persian word signifying "two branches," and thus contains an undesigned and accidental reference to the future bifurcation of the railway not far from this point. Here will start some day the branch line to Sarrakhs, in fact to Herat. Dushakh is situated about half-way between the sea and Bokhara. From this point the line turns towards the river Tedjend, about fifty versts distant, passes by the village of Tchodjuklu, and, avoiding as far as possible the Karakum steppe, reaches the well-watered oasis of Merv. To reach this town, seven hundred and fifty versts from the sea, used to occupy a journey of at least a month's duration. The same journey now only takes a day and a half, and will doubtless soon be accomplished in a still shorter time. It was not at first intended to continue the line through Tchihardjui, but through Burdalik to Kerki, the chief ford on the Oxus, and thus save about a hundred versts. The Emir of Bokhara, however, refused his permission to this, the original scheme, and with good reason. The line as designed by the Russians would have reached his capital on the Zerefshan, passing through an uncultivated country, whereas the line through Tchihardjui brings the chief centres of the khanate into connection with the railway. The line from that point to Merv runs along a well-known caravan route: if I mistake not, along the Rafatak route to Tchihardjui. At this latter place there is for the present no bridge built, but the traffic is carried over by means of a steam ferry. The Oxus is at this point a verst and a half wide, and the construction of a bridge would have required an enormous expenditure both of time and money, while the steam ferry-boat can at each passage take over ten thousand poods in addition to passengers. This ferry-boat will keep open the communications between the two banks of the Oxus, and make Tchihardjui the meeting-point of the upper and lower Oxus.

From Tchihardjui, or, to speak more correctly, from Sheikh, which lies a little higher up the river, the line passes a steppe about

twenty versts across. In the middle of this steppe lies the Lake of Karaköl (Black Lake), celebrated in former days, when indeed it was of larger extent than it is at present. On its banks is a village of the same name, which was visited by Djingiz Khan for the pleasure of hawking. The deep shifting sands of this steppe offer the same difficulties to the engineer as those of the seacoast and of Kazandjik. But as in their case sea-water, so here the fresh water of the Oxus was employed to fix them and thus to facilitate the construction of the railroad. After the station of Karaköl was passed there were no further difficulties experienced in the work. The line was traced not through the middle, but as far as possible on the edge of the cultivated country, so as to avoid passing over the irrigation canals, which would have necessitated a large expenditure on bridges, or else a disastrous disturbance of the irrigation works. Bokhara, the capital itself, lies for the present at some little distance from the line, which passes to the right of the cultivated land on the Zerefshan through the so-called Melik steppe, past the Melik Lake, runs near the village of Ak Satch, and then traversing a country free from canals, reaches the town of Kermineh, and at last the frontier of the Russian territory. In all three hundred versts of the line are in the dominions of the Emir of Bokhara, while its concluding portion on Russian territory, as far as the city of Samarkand, consists of eighty-five versts. At this terminus the railway station is placed half a mile distant from the fortress.

Summing up the whole course of the railway from the coast of the Caspian to the sometime capital of Timur, we shall find on these one thousand three hundred and thirty-five versts of road sixty-two principal points :—

	Versts from the Coast.		Versts from the Coast.
1. Molla Kari	22	21. Bezmein	401
2. Kötel	41	22. Ashkabad	422
3. Bala Ishem	56	23. Geurs	454
4. Post No. 2	71	24. Utch Su	471
5. Aidin	86	25. Baba Durmaz Steppe	492
6. A pass	102	26. Artik	510
7. Aktche Kuima	117	27. Kahka	543
8. Post No. 3.	132	28. Arman Sögüt	562
9. Kazandjik	148	29. Dushakh	581
10. Uzun Lake	164	30. Takir	605
11. Ushan	186	31. Tedjend	628
12. Post No. 4	201	32. Gök Suwar	650
13. Kizil Arvat	217	33. Tchodjukli	675
14. Kodj	243	34. Dört Kuyu	701
15. Bami	268	35. Topar	724
16. Artchman	298	36. Merv	748
17. Sendje	318	37. Yussuf Khan	767
18. Bashardin	328	38. Kurban Kale	790
19. Kelat	355	39. Keltchi	814
20. Gök Tepe	380	40. On the plain	837

	Versts from the Coast.		Versts from the Coast.
41. Oglitch Steppe	862	52. Kuyan Mezar	1125
42. Deep Sand	887	53. Ak Satch	1143
43. Rafatak	911	54. Melik	1163
44. Eshek Rabat	934	55. Kermineh	1186
45. Selim	957	56. Zia ed Din	1212
46. Tchihardjui	980	57. Mir	1232
47. Kiat	1012	58. Sara Bulak	1252
48. Kara Köl	1034	59. Ketto Kurgan	1267
49. Yeketut	1058	60. A valley	1291
50. Bokhara	1082	61. Arab Khan	1316
51. Tugai Rabat	1100	62. Samarkand	1335

To what extent the above-mentioned principal points will, in the future, figure as stations on the railway is not yet determined, as of course the more important halting-places will only be established in the larger centres of population. As such centres may be enumerated: (1) Mikhailovsk, or Usun Ada; (2) Kizil Arvat; (3) Ashkabad, where the main road from Khiva joins the railway; (4) Dushakh, the future starting-point of the Indian railway; (5) Merv; (6) Tchihardjui; (7) Bokhara; and, lastly, (8) Samarkand. At these points the larger railway stations will probably be erected, while the other stations, especially those upon the steppe, will long remain in their present primitive condition, some of them wooden sheds, others merely tents of felt.

As regards the pace of the trains, it is for the present reckoned at twenty versts an hour, which will in time be probably doubled, if not tripled. Taking the pace, however, to be forty versts an hour, the whole distance from the eastern coast of the Caspian Sea to Samarkand will be traversed in thirty-six hours, including stoppages. If to this we add the eighteen hours required for the sea-passage from Baku to Usun Ada and the twenty-four hours of railway travelling from Tiflis to Baku, we shall find it possible to leave the central point of Transcaucasia and to arrive at the former capital of Timur in three days and a quarter.

It may be of special interest to professional readers to notice that the Transcaspian railway is one of the most cheaply constructed in the world, costing only 30,000 roubles per verst. Of this sum, 14,000 roubles were expended on rails, rolling-stock, &c., and 16,000 roubles in wages, salaries, stations, and bridges. The whole road, therefore, from the coast to Samarkand cost 40,050,000 roubles, and is thus cheaper than the Transcaucasian lines, which are but half its length. This remarkable cheapness is attributed by Dr. Heyfelder, the author of by far the best work that has appeared on the Transcaspian Railway, to the following causes: (1) The suitability of the plan, including the saving in guard-houses, crossings, and stations, and in general the great simplicity of such buildings as were indispensable, namely, quarters for the officials, sheds, work-

shops, &c.; (2) The cheapness of the labour employed; the small number of Russians receiving a rouble and a half a day, the Persians and Tekké Turkomans 30 kopecks, and the Bokhariots only 22 kopecks a day. Of course this was only possible through the position of the Russians as conquerors, whose mere orders would have sufficed to collect labourers, independently of the wages offered, in a country where a day-labourer's wage seldom rises above 22 kopecks. In Persia or any other country of the Mohammedan East such an undertaking on the part of Russian contractors would not have met with a like measure of success. (3) The rapidity with which the construction was carried out; in two years an amount of line was constructed which, under other territorial circumstances, would have taken five or six years to finish. Lastly, the entire absence of any disputes about the acquisition of the land; up to the frontier of Bokhara the Russians never made any inquiries as to any rights in the land, but treated it as the property of the State. The maintenance of the line will be as cheap as its construction, if we leave out of calculation the inevitable damage caused at certain times of the year by the inundations of the Tedjend, the Herirud, and the Oxus. In a country where there are no roads, where no fences, no gates, and no watch-boxes are required, it was quite sufficient to place a watchman's hut every twelve and a half versts. Such a hut is built in the form of a barrack, and serves as the dwelling-place of several workmen and watchmen. By its side is erected a small tower, from which the road can be surveyed for some distance right and left. But in order to inspect more minutely the state of the permanent way, to try the rails, and to remove obstacles, two men start daily from the barracks, going six versts in each direction up and down the line. For this purpose each barrack is provided with two horses. On their journey out one rides and the other walks; on their return journey the one who rode walks, yielding the horse to his comrade who now in his turn rides. By this clever arrangement the inspection of the vast line of railway does not require more than one hundred and ten or one hundred and twenty such guardhouses—and a by no means contemptible economy is effected.

We have in the preceding pages described as briefly as possible the origin, the construction, and the character of the Transcaspian Railway; we have drawn attention to the vastness of the whole undertaking, and will now pass on to describe the great advantages which this new road from Eastern Europe into the heart of Asia can and will confer on the Russian State, the Asiatic countries through which it runs, and the European world in general. The value of this Central Asiatic railway may be estimated from the point of view (1) of civilisation, (2) of commerce, (3) of military politics.

With regard to its influence on civilisation, we must of course, before all things, keep in view those social changes which will arise in consequence of the facilitation and acceleration of intercourse between Europe and these regions, which till lately were almost entirely inaccessible. In so doing we must take as our standard our experiences of similar changes elsewhere. We may thus boldly assert that it will be long before this new railway can act as a sort of telegraph wire along which the European spirit, with its ceaseless and fruitful activity, can flash all of a sudden into the recesses of Central Asia. The snorting steam-horse may rush with marvellous speed through that old world; the sparks which it scatters along its course will leave as few traces on the mind of the Asiatic, obstinately attached to his old-fashioned view of life, as on the gravel of the line. Our principle, "Time is Money," is too stiffly opposed to those of the Orientals, "Haste is the work of the devil," and "Hesitation comes from God," to allow the abolition of distance between us to be at once a blessing. Of the former Turkoman inhabitants of the steppes bordering on the northern offshoots of the Persian mountains, but a very small proportion will settle in the centres formed by the railway. Yomuts, Akhal-Tekkés, Merv-Tekkés, and the other children of the steppes, will keep themselves as far as they can from the railway, and try as long as possible to continue the old nomadic life to which they are firmly attached. They will avoid the smoke of the locomotive as the devil the smell of incense. But as the cruel nature of the Karakum steppe will not grow any milder, and the curse-laden waterless sand-wastes will refuse sufficient pasture for their flocks and herds, the population of these nomadic tribes will in a short time dwindle away to the half, or perhaps to the third, of what it is now. The Russian towns that are already coming into existence on the line show signs of this process having commenced. For instance, we find Ashkabad, which formerly consisted of a few miserable clay huts that served as granaries, containing now, inclusive of the garrison, a population of eight thousand, in houses of stone. None of these, however, are Turkomans. They are exclusively Russians, Armenians, Caucasians, and Persians. Much the same may be observed at Merv, where, as by the hand of an enchanter, whole streets of stone houses have come into existence, whose inhabitants are but to a very small extent Turkomans. Of these most belong to the tribe of the so-called Tchomrus, who formerly followed commercial pursuits, and had thus acquired some taste for a settled life. But for the great mass of the Turkomans a settled life is equivalent to death and ruin. This is the case in the lower valley of the Yaxartes, where Russian rule has not yet succeeded in carrying out the work of civilising the Kirgizes, which was begun a century ago.

As for any transformation of the culture of these Asiatics, that can only be expected in the case of the Persians, Caucasians, Tadjiks, and Ozbegs. These will probably in the next few years settle themselves in the towns arising along the line, and will there carry on business *more Asiatico* with a strong Russian tinge, and will call back in this new guise the civilisation of ages long past. In the flourishing days that preceded the irruption of the Mongols, Merv, Nissa, Abiverd, and Abeskun, on the coast were inhabited by an Iranian and not by a Turkish population. This seems to have been the case in the period preceding the introduction of Islam, nay, in that preceding the conquest of Alexander. The stories of the old seats of Parthian civilisation are too obscure to allow of our speaking definitely about the national character of that civilisation. Nor should we share the sanguine hopes, entertained in Russian circles, with regard to the capacities for cultivation possessed by the territory that borders on the northern offshoots of the Kubbet mountains. We should not forget that those favourable descriptions of the Turkoman country and its capabilities were written to stimulate the Muscovite's lust for annexation, and to justify continual acts of aggression. Thus Baron Tornau, more than a quarter of a century ago, in his preface to Bode's work on the Turkomans, observed that the shores of the Caspian Sea were of the highest interest for Russians, as they could there find extensive pastures for their flocks and a rich market for their manufactures. So, too, General Petrusevitch, in his description of the journey made by him in 1878, remarked that the valleys in the Kubbet mountains had a fertile soil and never knew what a bad harvest meant, inasmuch as they had water for the purposes of irrigation in abundance; that in many of those valleys this abundance of water enabled them to raise crops of rice, and that the gardens around the villages were so large as to give the traveller at first sight an exaggerated impression of the size and importance of those villages; that in the upper valleys wheat and barley were grown, and amply watered by the abundant rains of autumn, two or three sharp showers in September and October being sufficient to ensure a good crop. In like manner General Annenkoff — of course for the purpose of recommending his plan of the railway — wrote in his essay entitled *The Akhal-Tekké Oasis and the Road to India*, "The first portion of this tract of land, from Kizil Arvat Bami, is fertile and well supplied with water, but it cannot compare with the second portion, which stretches from Bami through Gök Tepe to Ashkabad, and further on to the Tedjend. This tract of country is a verdant garden which yields regularly two crops a year. . . . . This fertility of the soil is the result of the artificial irrigation which it receives, and one meets the traces of it at every step. . . . . The Tekké oasis, together with the valleys of the Tchandyr and Sumbar, are some of the most fertile regions of the

earth, and can support a million of inhabitants." Now we must not let ourselves be led away by these and similar extravagant statements. The fertility of Asiatic countries, and especially of such as depend upon a laborious system of irrigation, which in its turn ultimately depends upon a greater or less fall of snow, is not to be compared to the fertility of an alluvial soil in a temperate climate. Green and luxuriant meadows, rich cornfields, wooded hills, and inviting groves, are in these Asiatic countries the greatest rarities, and even their so highly praised artificial gardens appear to the eye that is accustomed to the cultivation of Central Europe or of America, to wear a character of poverty and meagreness. We will admit that the valleys of the rivers Tchandyr and Sumbar, on the northern slopes of the Kizil Dag and the Kubbet Dag do, during certain seasons of the year, make a splendid show, and the admiration of Dr. Heyfelder was very natural when he found on the southern slopes of the Kubbet mountains wild fig-trees, yew-trees, hornbeam, service-trees, honeysuckle, and other shrubs and plants all green even in December. The cultivator of the soil, however, is here engaged in a constant struggle with the storm-winds from the north and north-east, which bear the sand of the Karakum desert far into the cultivated country. He has to defend himself against its encroachment and will have to do so in the future. If then we admit that the favourable natural circumstances of the Akhal Tekké oasis, and of the tract from Ashkabad to the Tedjend are such as to enable them to shake off the curse that has rested upon them for more than six centuries, and to recover their former prosperity, still that would only mean an Asiatic degree of prosperity; the number of the inhabitants might be doubled, and yet the sanguine hopes expressed in the Russian organs would be very far from being realised. Only one decided advantage remains assured to the Russians, and that is the possibility of feeding a larger army, a thing impracticable without the possession of Khorassan. Finally, as regards the prospect of a revolution in the mental condition of the Turkomans, and of the Persian population of the neighbouring Khorassan, when we look to their present level of culture and to the results of the civilising efforts of the Russians in other regions, we may with tolerable certainty assert that here a radical change, a real approach to the mental condition of the West is hardly to be expected. Transcaucasia and Northern Khorassan will still long continue subject to the moral supremacy of Bokhara. In spite of the immense distance and the rule of the Russians for several centuries in Kazan, Ufa, and Tobolsk, Bokhara still exercises a strong influence upon the Tartars and Bashkirs of those regions. Such an influence it will exercise upon the future centres of population created by the railway at Ashkabad, Merv, and Sarrakhs. Indeed this influence will for a time at least be rendered more lively

by the increased facility of communication. The Moslem settlers in those places will adhere to their religion with inflexible fidelity; they will become obedient and pacific subjects of the Czar, but will not abate one jot or tittle of their Asiatic way of thinking, or separate themselves in the least degree from the world of Mohammedan culture. Russian schools and Russian manners will of course produce a certain impression on the leaders of society, and, as in the Caucasus, so here too there will be found willing tools for the Russians among the ranks of the Moslems—such men as the Alikhanoffs, Tahiroffs, Mahomedoffs, &c. Indeed, owing to the adventurous and warlike spirit of the Turkomans, it is probable they will furnish a larger contingent of such Russianised Mohammedans than even the Caucasus has done. Military orders, champagne and brandy, and still more the opportunities of distinction offered by the continual aggressions of the Russian military party, will convert the beys and serdars into Russian tools, but the mass of the Moslem population will remain thoroughly Asiatic under the guidance of the Ishans and the Akhonds. The civilising efforts of the Russians will have more effect on the neighbouring Khorassan. The khans of Budjnurd, Deregöz, Kabushan, and Kelat have already taken to learning the Russian language; the wearing of Russian clothes is making its way amongst the better classes, and the numerous manufactories of champagne and brandy will soon do their part in making the easygoing Shiites of those parts susceptible to the so-called Russian-European civilisation. It is a remarkable fact that even the holy city of Meshed, where the remains of the Imam Riza were formerly wont to call forth a downright paroxysm of Shiite devotion, now affords evidence of the change that has come over the north of Khorassan. The number of Russians travelling through the town has increased, and I learn from private sources that a considerable number of shops in the broad street, Khiyaban, have been established for the open and avowed sale of arrack, once a rigorously forbidden drink.

Of much greater importance are the prospects of advantage to the Russians from the Transcaspian Railway in the department of commerce, in which a downright revolution will be effected by the accelerated intercourse between Europe and Central Asia. Of the advantages resulting from these changes the lion's share will doubtless fall to Russia. It would be difficult to say beforehand whether these changes will be confined to Central Asia or will extend to India and to China. One point is, however, certain. The commerce of Afghanistan, of North-Eastern Persia, and of the three Khanates will for the future pass along the Transcaspian Railway, the railway of the Caucasus, and for the most part through Russia. Its future emporia will be Bokhara, Merv, Ashkabad, Baku, and Batum. The khanate of Bokhara, with its 2,130,000 inhabitants, has always been

distinguished for its activity in production and in commerce. Its capital is looked upon as the centre of the Central Asiatic world, not only on account of its numerous mosques and the number of its learned theologians, but also on account of its flourishing trade. This was always the case, and under Russian rule, owing to the increased security of the roads and the greater facility of communication, the trade of Bokhara has assumed greater dimensions. According to the customs returns for the year 1867, the value of Russian goods exported to Central Asia amounted to 10,875,000 roubles, and that of goods imported to Russia from the khanates to 8,504,000 roubles. These numbers have gradually risen, and according to the latest Russian statistics the exports from Russia to Central Asia during last year amounted to 900,000 poods, with a value of 37,000,000 roubles, and the imports from Central Asia to Russia amounted to 1,371,000 poods, with a value of 15,860,000 roubles. As soon as the railway is in full working order, and the regulations regarding freights are settled, the capital on the Zerefshan will in all probability, supported by its ancient renown, raise itself to the position of the chief emporium in the three khanates. Here will be formed the centre of the commerce of the steppes to the north and the north-west of the basin of the Yaxartes, and even of Fergana and Eastern Turkestan. Owing to the active commercial spirit of the Tadjiks of this khanate, the retail trade will probably remain in their hands. The wholesale business will probably be conducted by Russians, and that too on a larger scale than has hitherto been the case. Up to 1885 only the agents of the so-called Russian Commercial Company stopped there in a caravan, and they were half prisoners, while the so-called Russian traders were either Tartars or Jews. The correspondent of a Russian newspaper lamented that "the Russian Mercury is represented on the Zerefshan by our Itzigs and Moshes; of orthodox traders there is not a trace to be found." Now that a Russian ambassador resides at Bokhara, and is treated with extreme respect by the present Emir Abdul Ahad, the orthodox will have no difficulty in pressing the Itzigs and Moshes out of the field; and in the new railway station erected outside Bokhara, the Russian language will become *par excellence* the language of commerce.

The second place after Bokhara will be probably occupied by Merv. This old Queen of the World will of course not regain the ephemeral crown assigned her by Oriental chroniclers; but, unless the English provide Herat with a railway, Merv will certainly become the commercial centre of Afghanistan and North-Eastern Persia. It is true that the oasis of cultivated land around the city does not extend at the farthest beyond thirty or forty English miles, yet properly managed irrigation might easily restore the place to its former splendour. We are not so sanguine as to expect the revival

of the Merv of the days before the Mongols, with its hundreds of gates, its hundreds of mosques, baths, &c. We are therefore compelled to content ourselves with expecting that in the course of the next ten years the site of the ancient Margiana will be occupied by a Russian-Asiatic town. The same future, and with still greater reason, may be anticipated for Ashkabad. As its oasis thrusts itself northwards into the steppe of Karakum, it will serve as the meeting-place of the trade from Khiva on the north, and from Persia and Khorassan on the south. In anticipation of this development the Persian Government is at present engaged in opening communications with Ashkabad. General Gasteiger Khan is now making a road from Ashkabad over the mountains of Kurdestan into Persia. We will not here speak of the increasing importance of the ports on the eastern and western shores of the Caspian, and also of the Black Sea. What we have already adduced is sufficient to set the commercial importance of the Transcaspian Railway in its proper light. While formerly caravans from the Khanates took three months, full of dangers, anxieties, and hardships, to reach their destination, while the value of the wares was depreciated by the repeated loading and unloading, and the expenses of the carriage in like manner increased, now the bales of goods can be sent from the Zerefshan in four or five days to Moscow, and in seven days to the manufacturing cities of Germany, France, and England. This is certainly a great step forward in civilisation, a very *cornu copiæ*, if only it were not Muscovite hands that held this horn of plenty. Russia, which hinders by its prohibitive duties the entry into its vast territory of foreign manufactured goods, will doubtless follow the same narrow-minded course on its Transcaspian Railway. Russia will hardly render the treasures of India and of the farther East more accessible to us; for this railway, destined at some later time to facilitate the peaceful intercourse of the East and the West, will for the present be chiefly used for military purposes. Instead of serving as the ladder of civilisation, these lines of rails will serve as a deadly weapon in a worldwide struggle.

We have in fact now reached the third head of our consideration with regard to the value of the Transcaspian Railway, and can without any circumlocution assert that merely *strategical, military*, and *political* reasons led the Russians to the construction of this line. It was planned by the Muscovite, in his pursuit of universal empire, in his greed for plunder and blood, as a means to sweep his mighty rival out of his path. Immediately after the taking of Samarkand voices were heard both in Russia and in Europe recommending the construction of a "world railway," starting from the Volga and passing through Central Asia to India. Many projects were at that time brought forward, amongst others a project of the

engineer Baranoffski, who proposed to make the line from Saratoff on the Volga, between the Caspian and Aral Sea, to Khiva, and from thence through Balkh and Kabul to Peshawur. Another was the Lesseps-Cotard plan, according to which the line would have run from Orenburg through Tashkend and Samarkand, to Karshi, and then as before through Balkh and the Hindu Kush to Peshawur. Other more or less fantastical plans were brought forward, but the Russian Government did not allow itself to be led astray by any of them. In order to reach Central Asia from the north they would have had to overcome the difficulties presented by two thousand versts of steppe, merely to reach from Orenburg the banks of the Yaxartes. The cost would have been immense, not less than from fifteen to twenty millions of pounds sterling. The idea of a Turkestan railway, *i.e.* a railway from north to south, was therefore dropped, and in its place was substituted the easier, cheaper, and more convenient line from west to east. The greater suitability of this line for the purposes of Russia was made apparent by the following considerations. In the long struggle towards India, Russia had become mistress of the Caucasus, which country was especially suited to be a place of arms for military operations in the north and north-east of Persia; and, moreover, had acquired at the end of the last Russo-Turkish war the important harbour of Batum. Now Batum furnished, so to say, the missing link in the chain of communication between the interior of Russia and the eastern coast of the Caspian. No sooner was this missing link discovered—or, to speak more exactly, presented to Russia by the wise diplomatists on the Spree—than the Russians began seriously the subjugation of Turkomania. The first portion of the line—namely, that from the coast to Bami—was consequently built out of purely military considerations, and in spite of all the commercial and civilising intentions which the Russians proclaim aloud to the world, it is still to be considered as an essentially military line. The directors of affairs on the banks of the Neva are much more concerned about the carriage of armies, batteries, provisions, and ammunition than about the transport of bales of merchandise and such means of civilisation. Of course it was to avoid exciting the suspicions of the English that the line has been constructed along the northern frontier of Persia, through Bokhara and Merv to Samarkand, in order, so it is said, to facilitate the communication between Russian Turkestan and the mother country. But it is to be hoped that nobody is so simple as not to understand this piece of Muscovite hypocrisy. The alleged reason for building the railway, the improvement of the communication with the Khanates, is certainly of great importance, as in case of a war breaking out Russia will be able to make use of the forces on the Yaxartes, at Semiryetchensk, and in South Siberia generally. The construction

of the Transcaspian Railway as far as Samarkand of course contributes to the construction in the future of a railway right round the Czar's immense dominions. But at the present time its chief importance consists in the fact that Russia is thereby enabled to transport part of her forces in five days from Odessa or any other point of South Russia to the Tedjend, and from thence to reach Herat sooner than the English, even supposing the Indus Railway to be carried as far as Candahar. That the Russians will not be in a hurry to continue the line from Dushakh or Mehne to Sarrakhs is quite intelligible when we consider the ever-increasing spirit of rivalry between Russia and England. But no disadvantage to the Russians will result from this delay, as for the present they content themselves with an excellent *chaussée*, the ground is surveyed and all preparations made for future aggressions. In 1878, when Russia was ready to answer the appearance of the English fleet with an expedition to India, General Kauffman had to content himself with placing an unimportant *corps d'armée* at Djam, so that his menace did not go beyond a manifestation of bad humour. Should such a combination of circumstances occur again, the Russians would have at their disposal more formidable forces and more important strategical positions. To-day the main military road stretches from the Caucasus along the Transcaspian Railway to the north-western frontier of Afghanistan, while the bringing up of reinforcements through Turkestan from South Siberia by way of Viernoi, Tashkend, and Samarkand has been made quite secure. This line of communication is of all the more importance as England, under the protection of an alliance with Turkey, can disturb with her fleet Russia's communications on the Black Sea, nay, perhaps even cut them off altogether. In view of such a contingency the Russians have long ago seen the necessity of the Vladikavkaz-Petroffsk line, and when the military road from the interior of the empire to the western coast of the Caspian has been once laid down, all danger of an interruption of communications will be done away with, and the Transcaspian Railway, which has just been completed, will at last answer all the purposes for which it is intended, and satisfy all the expectations that have been formed with respect to it.

It is probably out of personal pique and prepossession in favour of his darling project—a line passing from the Bay of Kindirli through Kungrat to the Oxus—that General Tchernayeff calls in question the utility of the new line, and even dares to assert that two years would hardly be sufficient for the transport of two hundred thousand men to the frontier of Afghanistan. In so doing, however, he makes a great mistake. The line he proposes would doubtless be much shorter, and from the point of view of a commercial connection with the Khanates, far preferable. But Russia has always used civilisation

and commerce as mere signboards. Her main endeavour was the establishment of a military road, and for that purpose the line along the northern frontier of Persia was by far the most suitable, as in this region the support of an army is rendered much easier by the vicinity of the rich corn-lands of Khorassan, than would be the case along a line passing through the thinly peopled and badly cultivated Khanate of Khiva. The railway along the northern slopes of the Kubbet mountains must also be regarded as a first step towards bringing, sooner or later, the province of Khorassan, if not the whole northern border of Persia, under the sceptre of the Czar. People's minds have been already sufficiently prepared for this change, and the Transcaspian Railway, supported by the prestige of the Russian victories over the Turkomans, as well as by the "wandering rouble," which here even more than elsewhere finds ready acceptance among the greedy and demoralised Persians, must in time prove a political factor of yet unsuspected importance.

How far Russia will succeed by means of this favourable position in attaining the final goal of her ambition, access to the Southern Ocean, is a point to be decided by the two colossal powers which are rivals in Asia, and a subject upon which I will not touch here. This much, however, may be said, namely, that John Bull, after a good deal of shaking and several digs in the ribs from his rival, has at last awakened out of sleep and has applied himself energetically to the work of defence. The race between the two railway lines is not yet finished. But as soon as they have reached their temporary goals, which on the Russian side will be the case in a few months, on the English in a few years, the struggle of giants will be no longer deferred. What is happening at present in the Balkan peninsula and elsewhere is merely a light vibration of the air produced by the terrible storm gathering in the distance, which the lightning conductors at the disposal of our wretched diplomatists will soon be no longer able to avert.

A. Vambéry.

CORRESPONDENCE.

DEMOCRACY IN NEW SOUTH WALES.

To the Editor of the FORTNIGHTLY REVIEW.

SIR,—I am surprised that the rapid growth of democracy in England has not made thoughtful men examine for themselves its influence on those communities of the English race in which it has been allowed to develop without let or hindrance. Almost all that in the old country is still in the region of political desire—absence of class distinctions, manhood suffrage, abolition of a State Church, marriage with a deceased wife's sister, increased facilities for divorce, equal division of land between sons and daughters of persons dying intestate—has been for a long time submitted to the test of experience in most of the colonies, certainly in New South Wales.

In New South Wales the first noteworthy contrast to the old country is the general apathy, with regard to politics, of all classes of the community. The day of a contested election causes hardly any stir, and passes almost unnoticed. The number of votes recorded compared with the number on the register is very small; there is no enthusiasm for any candidate, and very rarely any marked disapproval. There is frequently more excitement over a School Board or municipal election in England than over the election of a member of Parliament in New South Wales. The next noteworthy fact is the absence of parties. There is of course a Ministry and their following; there is also an opposition; but there is no dividing line of principles or even of party names to separate them. Every one, or nearly every one, would say he was a Liberal, but beyond that there would be no definition attempted. There are certain sectional divisions such as Catholics and Orangemen, but it is only on certain subjects they vote *en bloc* against one another. The same may be said of the Licensed Victuallers and the Local Optionists. Just lately there has sprung up the question of Protection as against Free Trade, which may afford a dividing line for the future, but certainly does not do so at the present time. A third noteworthy feature is the short duration of Parliament. By law, the Parliament ceases to exist in three years, but it very rarely attains that age. The quick succession of Ministries is simply bewildering. During the first six months of Lord Carrington's governorship there were three different Ministries.

No English politician could fail to notice the absence from political life of the leading men in the country. He would find them immersed in business, in squatting pursuits, or what in England would be called country life, or in the practice of the professions; but would rarely see them in the Assembly, still more rarely in the Ministry. He would, on the other hand, be extremely shocked to hear accusations of the most shameless corruption constantly brought against Ministers, members, and even the House itself; and that too not by men who, despising or disliking the institutions of the colony, hold aloof from them, but by the very members of the House and in the columns of the daily press.

For the practical work of legislation New South Wales is undoubtedly many years behind England, and on some subjects, such as insolvency and public health, most lamentably so.

Such a matter as law reform is almost ignored by the Assembly. It requires special knowledge and excites no popular enthusiasm; consequently an old Insolvency Act of 1841 is still in force in the colony, though there is not an honest trader that does not annually lose considerable sums from the want of a more adequate measure.

Owing to the absence of a Public Health Act typhoid fever has become a frightful scourge, while the insanitary condition of Sydney shocks every visitor. But if legislation is thus backward, the activity of the executive surpasses anything imagined since Plato's Republic. The Government, not content with carrying us from place to place in its own railways, carries us through the streets in its own trams, makes bridges, repairs roads, disposes of sewage, owns wharves, builds harbours and docks, engages in manufactures, and in a hundred and one ways interferes with the natural energies of the people.

The civil service is enormous, though, properly speaking, there is very little work for a civil service in New South Wales. There is no department of foreign affairs, so no foreign office is required; no army, no navy, no colonies, no India. The necessary work might, it is generally believed, be better done by less than one-half the twelve thousand and odd persons who overcrowd the civil service of the country.

The overcrowding is due to the fact that all appointments are political, and a Minister has to dispose of his less successful constituents somewhere. As a consequence our railways, it is said, enjoy the services of two men a mile more than are found necessary on other railway systems—a not inconsiderable item in a country where the lowest wages are seven shillings a day. This ill-constituted civil service is not without a disastrous effect on a considerable section of the population, who, despising retail trade or other honest means of obtaining a livelihood, adopt what is almost a recognised profession—become billet-hunters, as they are called—and wait till their importunity and the weakness of some Minister provides them with bread at the expense of the country.

Nor is it only in the civil service that such extravagance is found.

In the midst of wonderful prosperity the public debt of the colony has risen to the alarming dimensions of £41,000,000, involving an annual payment of £1,600,000 in interest. A large part of this sum has been expended on railways, some of which it is now admitted do not pay their interest, and on tramways which are almost a dead loss. But the borrowed money has been also expended to the amount of many millions on elaborate buildings in the most out-of-the-way places, enormous courthouses occupied for three weeks in the year, and magnificent bridges over small streams, where one-fifth of the expenditure would have met all requirements.

This inordinate expenditure, often on unproductive works, is the result of each member claiming, as the condition of his allegiance to the Ministry, the employment of a certain sum of public money annually in his constituency. The ministry are thus placed in the unfortunate dilemma of having to propose expenditure which they know is unnecessary, or else having to lose their places. An informal compact is entered into by the majority to stand by the proposals of the Ministry, each man thus obtaining the votes of the rest for his own particular object.

The splendid prospects and great wealth of New South Wales have made the English people anxious to lend money to the colony. But this facility of borrowing is only too likely to be abused by an Assembly so constituted; and although the amount of our existing debt need give no alarm to our creditors, still for a people who, all told, hardly number one million, a debt of forty-one millions must necessarily mean a very heavy burden. And, while extravagance is thus unchecked, there is no adequate inquiry into the finances. It very frequently happens that the expendi-

ture has been incurred before the country is informed of the fact or the Assembly has voted the money. For example, will it be believed that up to the present time (October, 1886) no official account of the expenditure on the Soudan campaign has been furnished to Parliament or to the country? The most gloomy part of the picture is undoubtedly the financial future. Probably no Ministry would survive the attempt to reduce the annual expenditure by two millions, a reform which would involve the dismissal of about one-third of the present civil service. Nor would it be easy to restrict railway construction to those lines only which show a reasonable prospect of payment. There is a temporary benefit felt by every one when a large expenditure of borrowed capital takes place, and the incubus of the interest does not concern the workmen, who have no special affection for New South Wales, and will only remain in the country as long as wages are high and work abundant.

The result is that every Assembly is elected by those who have an interest in the lavish expenditure, and who recognise that economy in the government would mean for the workman stoppage of wages, for the storekeeper stoppage of business.

Nor is the difficulty merely financial. Supposing a stop put to railway extension, a reform clearly dictated by financial laws, what is to be done with the thousands of navvies, who with their families would be suddenly left penniless? This army of navvies is our modern Prætorian Guard.

Democracy again has developed trades unionism to so alarming an extent that all commerce is now completely at the mercy of the leaders of the workmen.

During the last eighteen months large crowds of "unemployed" have almost daily congregated at their meeting-place in Sydney to hear the speeches of their leaders. Many of these men are, of course, mere loafers, but there are also numbers of genuine workmen, whose dismissal has been rendered necessary by the high rate of wages artificially kept up by the trades unions. Were the rate of wages regulated by supply and demand there would not be a sober and capable man out of work in any of the Australian colonies. Curious and almost incredible as it may seem, the leading principle of trades unionism has seized even the unemployed, who steadily refuse all work unless the remuneration comes up to the sum which they have themselves fixed as the minimum. Thus it appears that in Queensland during October, 1886, one hundred and fifty of the unemployed were offered their rations and 15s. a week for work up the country, and that all refused, saying they preferred to starve. Now 15s. a week, all found, was, until lately, considered fair wages, being equivalent to at least 25s. a week; so we may be allowed to doubt the probability of the dreadful alternative. The right to live, or rather to receive good wages, is being recognised by the Australian Governments, who are making, and are perhaps compelled to make, humiliating concessions to the unemployed.

It requires no prophet to foretell from this combination of circumstances great difficulties in the relations of labour and capital. The working class in Australia frankly admit that they will not allow wages to follow the laws of supply and demand; like their American brethren on the Pacific slope, they have caused Parliament to pass restrictive laws against Chinese competition, and they are now embarking on a crusade against the ocean-going steamers of such companies as the P. and O., or the Orient; for these, they allege, interfere with the intercolonial trade, which ought to remain an absolute monopoly of the Australian working man.

It follows that emigration agents completely mislead intending emigrants when they quote the wages obtained by workmen in New South Wales, or indeed in Australia generally, as any guide to their clients; for such wages are given only to those who obtain work; the less fortunate

or less skilful have to put up with, not a smaller wage or one proportioned to their skill, but no wages at all. In the meanwhile the labourers thus deprived of their dividend from the common wage-fund rely, and generally with success, on forcing the Government to employ them on work that is only partially beneficial to the State, and for which they are often wholly unfitted. In these two directions modern democracy appears in Australian communities to be tending towards a crude Socialism; namely, in the omnipresence of the Government, and in the assertion of the right of every man to demand of the Government, not only such wages for work as will keep him and his family above starvation, but such as will place him nearly, if not quite, on a level with workmen in ordinary employment.

The great question, however, that demands an answer from every English Radical is, whether the changes in the direction of democracy to which he has been looking forward in England, and which he sees accomplished facts here in New South Wales, are really changes in the direction of progress. Can it be said that democracy has proved itself competent to perform the functions of government under these conditions, and in the absence of such highly educated agents of democracy as the leaders of the English Liberal Party?

The people of New South Wales will compare favourably in most respects with the population of any other country. Their kindness, generosity, and hospitality are proverbial. They are loyal and patriotic, and willing to volunteer even unwise sacrifices for the good of the empire. In no country is the ideal of English home life better realised than in the ordinary household of New South Wales. Can anyone say that such a people is adequately represented, or indeed, represented at all, by the House of Assembly? Nor are we allowed to hope that this low tone of political life is likely to terminate with the removal of some temporary cause. When we follow the history of the colony since the introduction of responsible government, the number of men of character and attainments engaged in politics seems to have decreased with every election; nor will the record of the present session, which has been unusually fertile in scenes of disorder, be likely to attract any man of self-respect and character.

AUGUSTUS NASH.

Australian Club, Sydney, New South Wales.

THE NÄÄS SLÖJD: A SWEDISH SYSTEM OF HANDWORK.

To the Editor of the FORTNIGHTLY REVIEW.

SIR,—Having seen that Sir John Lubbock refers in your October number to the Nääs Slöjd, will you allow me to give a short account of that system of handwork, which I had the privilege of practically studying this summer?

This system owes its existence to the enlightened philanthropy of Mr. Abrahamson, proprietor of the estate of Nääs, near Gothenburg. Here, in 1875, he founded the Nääs Slöjdlärare-seminarium, his object being to give to teachers an opportunity of receiving instruction in handwork, and in this way to promote the introduction of manual instruction into schools. His generous plan has been crowned with signal success. The number of teachers who attend the Slöjd courses has gradually increased; considerably over one hundred annually now receive instruction at the Seminary, while so highly is this particular form of handwork appreciated

throughout Sweden, that it has already been introduced into six hundred schools.

It must not be thought that only Swedish teachers are admitted to the Seminary; the sympathies of its founder are world-wide. Not only have Norwegians, Russians, Danes, Belgians, Germans, Austrians, English been welcomed within its walls, but even distant Japan has sent a delegate, and, owing to the efforts of the Swedish missionaries, an Abyssinian, trained at this Institution, is about to introduce instruction in Slöjd into the schools of his native land.

Several villas have been built on the estate by Mr. Abrahamson for the accommodation of the Slöjd students. Instruction and lodging are gratuitous, while board is covered by the modest sum of one krona twenty-five öre, about 1s. 6d. per day. Four courses, of six weeks each, are held at different times throughout the year. At last summer's course forty-nine students of various nationalities were present, of whom eight were ladies. The directress of the Seminary, at the time of my visit, was a lady, who, having passed with honour the severe Government examination for teachers at Stockholm, could yet use the saw or plane as deftly as the skilled artisan; and, indeed, it is no uncommon thing in Sweden for ladies of high culture and refinement to adopt Slöjd as their profession.

The form of handwork practised at Nääs is that of carpentry; turning and wood-carving play a subordinate part. The Seminary, a large, airy building, comprises two workshops, furnished with all necessary appliances; a lecture-room, in which the theoretical instruction in Slöjd is given; and three small rooms, in which specimens of the various models made in the Institution are exhibited. The programme of work at Nääs makes a considerable demand on the physical strength. Six hours a day are spent in practical Slöjd, while one hour is devoted to theoretical instruction. I can, however, testify from personal experience as to the interesting and enjoyable character of the work, nor have I met a single Slöjd student who was not inspired with enthusiasm for his art.

The Nääs system concerns itself with the training of children from the age of eleven to fourteen. Its object is in no wise to prepare them for any special trade, but rather to impart general dexterity of hand. We often see exemplified, in the case of a skilled workman, the fact that the exercise of the hand in one special direction unfits it for work of a different character. To subject a child, as yet incapable of choosing his trade, to such a process would be to inflict on him a grievous wrong, while to develop a many-sided dexterity of hand, which will prove valuable, whatever his future circumstances may be, and at the same time furnish him with a means of healthy enjoyment, is surely to bestow on him that birthright of every child born into the world, which ignorant systems of education have only too long withheld. The word Slöjd, for which we have no exact equivalent in English, means clever-handed, dexterous. This term is not restricted to the form of handwork taught at Nääs, but is applied to the various kinds of handicraft in use in the Swedish schools. The principle that the object made must be entirely the work of one person, together with the facts that the knife is the tool most used, and that the productions are never of large size, constitute the main points of difference between the Nääs Slöjd and trade carpentry.

This system, however, does far more than merely impart dexterity of hand to the child; it professes no less than to develop him physically, mentally, and morally. A practical acquaintance with it is all that is necessary to convince us that the claim put forward by its supporters to the following advantages is a just one:—

It encourages a love of work in the children.

It inspires respect for the rougher kinds of work.
It cultivates spontaneous activity.
It habituates to order, accuracy, cleanliness, and neatness.
It accustoms to attention, industry, and perseverance.
It develops the physical strength.
It acts as a counterpoise to too much sitting.
It trains the eye and cultivates the sense of form.
It leads the child to the conception of harmony and beauty.

To Mr. Salamon, nephew of Mr. Abrahamson, and director of the Institution, who, with untiring zeal, devotes himself to the promotion of this branch of education, is due the credit of having arranged the systematic series of models at present in use. At one time, no regular plan of instruction existed. Nothing, argued Mr. Salamon, is practical which is not methodical. He, therefore, set himself to arrange a graduated model-series, with the result that we have now at Nääs an illustration of that fundamental principle of all true teaching so earnestly insisted on by enlightened educationalists, namely, that of proceeding from the known to the unknown, from the easy to the difficult, from the simple to the complex. As Fröbel demands, for the child of an earlier age, that the reward gained shall be the actual product of his own industry, so Mr. Salamon insists that the pupil shall retain the fruits of his labours. The brightly coloured mat, so dear to the heart of the little one of five or six summers, is replaced by the useful paper-knife or well-made box, no less attractive to the boy of eleven or twelve. All the models are of such a character that they are practically useful in the child's home, and thus the link so often wanting between home and school-life is supplied. As examples of the models used, altogether one hundred in number, we may cite, a pen-holder, a hammer-handle, a spoon, a foot-stool, a bread-board, a kitchen-chair. These unadorned models may perhaps appear uninteresting to the superficial onlooker, but in adopting them Mr. Salamon has been led by true educational principles. At one time elaborate patterns of fret-work and wood-carving were employed, but it was found that in the limited time given by the children to handwork they could not learn to execute these with anything like perfection, and nothing short of the nearest possible approach to perfection will satisfy the ideas of the authorities at Nääs. Varnish and paint have been banished, for they may be used to conceal bad work, and their employment is apt to make the children superficial. The beautiful, satin-like polish of the wood is produced entirely by the child's own efforts, by his diligent rubbing with sandpaper, or his skilful management of the plane. We get in this way good work, true work, work which Mr. Ruskin himself might admire, work which has gained nothing from external applications of paint and varnish, but the beauty of which has been drawn forth, if we may so speak, from the inherent properties of the wood by the hand of patient industry alone.

In 1882 the educational authorities at Stockholm were anxious to introduce some reforms into the systems of manual instruction carried on there, and commissioned Mr. Berg, inspector of Slöjd, to visit the schools throughout the country, and report upon the various kinds of handwork practised in them. On his return Mr. Berg proposed to introduce the system of Nääs Slöjd, which he considered to be the best, the most complete, and the most truly educative system of handicraft known. Would it not be well for those who are desirous of introducing manual instruction into the schools of this country, to inquire whether the Nääs system might not also answer the requirements of such education in our own land?

Any one who has visited the Northern Museum in Stockholm must have gained some idea of the industrious lives led formerly by the Swedish peasants. The Museum contains numerous household articles of wood

beautifully carved, the work of the men, and exquisitely-wrought embroideries, the fruits of the industry of the women. Owing to the introduction of machinery, the progress of book-learning, and the manufacture and sale of alcoholic drinks, this *Husslöjd* was for a time almost banished, and drunkenness and criminality largely increased. Strong laws, however, were passed by Government against the use of alcoholic liquors, drunkenness was in great measure subdued, criminality decreased, and the peasants have once more returned to their domestic industries. The question of the introduction of manual instruction, which at first sight might seem of interest only to those more nearly connected with the organization of our schools, may, if further examined, be found to involve such far-reaching issues that the statesman, who has in view the moral improvement of the people, cannot afford to treat it with neglect. Might not the spirit of cheerful domestic industry, which the cultivation of handwork is calculated to promote, do much to banish those evils of intemperance, immorality, and social discontent so prevalent in our time?

I am, Sir, yours faithfully,

ADELINE PULLAR.

HOUSELESS AT NIGHT.

To the Editor of the FORTNIGHTLY REVIEW.

SIR,—We avail ourselves of your courteous permission to lay before your readers a few facts concerning the houseless and starving poor who are to be found every night wandering in the streets of London. During the last five or six weeks we have convinced ourselves, personally and through the agency of experts well qualified to form an unbiassed opinion in such matters, that even on the most bitter winter nights there is a large number of men, women, and children who have absolutely nowhere to turn to for a night's lodging. The obvious question that presents itself to us is, Why do not these unfortunate waifs and strays seek the shelter of the workhouse or the casual ward? And grave indeed must be the reasons which induce any human creature to deliberately prefer the pitiless cold of our English winter nights to the asylum offered by the institutions which the State provides. In the first place, to apply to the relieving officer and demand admission to the workhouse is an acknowledgment of utter despair and degradation in the social scale that an able-bodied man or woman with any remnant of pluck remaining will be very loth to make. It seems even better, in spite of starvation, to go on hoping against hope that work will somehow turn up, if not to-day then to-morrow, for the loss of moral tone attached to entering a workhouse makes any other course preferable. And even when the necessary process has been gone through of making a public advertisement of his misery, what prospect lies before the working man who breaks up all family ties and enters the workhouse, himself and his sons at one door and his wife and daughters at the other? "All hope abandon ye who enter here" is the text he sees writ large over the gates; for what particular period is the working man to put to his stay in the union, and what better chance than before has he of getting work when he emerges again into that world with which he has more than ever lost touch? He has another alternative, to tramp from casual ward to casual ward, where, at least, it may be argued, he will find a night's lodging and the bare necessaries of life, while he can search for work during the daytime. But unfortunately the law does not permit the inmate of the casual ward to leave again until nine o'clock in the morning, in order that he may first perform the task allotted to him as the equivalent for

his night's lodging. By that hour, it is needless to say, all the work for the day has been long ago given out in the Docks and elsewhere, and nothing now remains but to loaf about wearily till the next evening and return to the same cheerless prison-house or tramp on to the next. In some instances the guardians have taken upon themselves to disregard this regulation, but the bare possibility of its enforcement is enough to close the door to the houseless wayfarer. As a matter of fact, the man or woman, who still has some spark of independence left, avoids the casual ward and the company to be met with there with the utmost horror. Our own observation fully confirms the experience of others, that the type usually to be found in the casual ward is that of the professional "sturdy beggar," or else that of the most utterly abandoned wreck of humanity rather than of the genuine artisan in distress. But whatever the reasons may be which make so many poor people disregard the asylums of the State as places of refuge, the fact remains that in the frost and snow and rain of the last two months the streets were peopled all night long by half-clad wretches of both sexes whose miserable condition and wan faces told a tale more piteous than their lips could frame. Several cases of actual death from exposure have been specifically reported in the newspapers, and there must have been numberless other instances in which the bitter cold was responsible for sickness and death. The following is the bare unvarnished report of a member of the police force who has been of great assistance to us in supplying the facts we have gathered together on this subject. "I find the average numbers nightly without a home or place of rest from the east of the City to Bow Church (two miles) and from Shoreditch Church to Poplar Church (three miles) is two hundred and fifty men and fifty women, the latter in many instances accompanied by children. I have questioned many of them of both sexes, and have no doubt there are many cases where drink and crime has brought them to poverty, but I heard many a probable tale of homes being sold for rent through illness and want of work, many cases where the bed has been taken from under the sick and sold by the brokers for debt; many a poor pinched-faced English navvy was among them with his shovel and pickaxe. I should certainly suggest a refuge be started, and if possible just something ever so small, in the way of food, be given to keep up the heart above zero."

Assured of the reality of a condition of things so disgraceful to the humanity and civilisation of the greatest and wealthiest city in the world, we felt that we could not rest until we had done something, however small, to alleviate it. If emigration be a remedy, then let who can persuade these poor people to emigrate; but there they remain at present, and their numbers are swelled continually by labourers from the country, whom nothing can restrain from tramping to London in the futile search for work. In the meantime, what we have actually done is this. We have taken a house in Waterloo Street, Commercial Road, E., containing two large rooms, formerly used as schoolrooms. The site is close to the Docks, and in the centre of the district where perhaps the greatest distress of the kind is to be found. We are having plain wooden bunks, something like the berths of a ship's cabin, fitted up in rows along the floor; in each of these will be placed a mattress, enclosed in a wrapper of American cloth; there will also be a coverlet of American cloth nailed to the foot of the bunk, which can be drawn up so as to cover the person of the sleeper. This arrangement will ensure as much cleanliness as it is reasonable to expect under the circumstances. The rooms will be warmed by gas-stoves. The women and children will be kept separate from the men, and as regards discrimination in admitting those of either sex to the house, we shall have the services, as caretakers, of a muscular ex-sergeant of marines and his wife, who have both had experience of the

class of people to be dealt with. We intend to give to each inmate of our "House of Shelter" just a piece of bread and a glass of water both evening and morning, with perhaps a little warm gruel for the children. A registry will be kept of all who come in, and if possible they will be assisted in getting work, but we shall be content, until we feel our way a little more, to provide a mere shelter from the weather to those who would otherwise have none. Certainly the bare accommodation and rough fare is not likely to attract those who could possibly find a roof elsewhere. We are quite prepared to be told that such an institution as ours will encourage professional loafing and mendicancy, but we can only repeat that the House of Shelter will not be sufficiently attractive to draw to itself those who can afford the common lodging-house or those who frequent the casual ward. Moreover, we can point to similar institutions in other places that have done admittedly good work in alleviating distress, and in helping poor workpeople to tide over hard times, by giving them breathing-time and that chance of a fresh start which somehow the workhouse never gives. There always must be a class, humanly speaking, beyond all hope of rehabilitation in the social scale, but there is another class just on the verge of the precipice, and this is the class we desire more particularly to help.

Our present House of Shelter will hold about a hundred in all, and we hope soon to establish others in districts where they are needed. We calculate the cost per head per night as being something very small, not more than two or three pence, everything included. We cannot but think that money so spent will be well spent. Until our statesmen or our political economists find some cure for what is one of the most terrible social sores that a great community can smart under, we have no fear that we are doing harm in employing a palliative such as we describe. The beginning we have made is a small one, but we feel convinced that every House of Shelter which is started will do something to alleviate the terrible condition to which many of our fellow-citizens have been reduced, whether by their own fault or not is no matter in this instance. By the 1st of February we hope to open our doors, and we simply appeal to all those who themselves enjoy homes of comfort and culture to give some thought to those who have nothing between their nakedness and the winter weather, and to help us in carrying on the work for which we have made ourselves responsible. Some small funds we have already in hand, thanks to the generosity of a few friends, but we need much more assistance before the permanency of our work can be assured, and other "Houses of Shelter" inaugurated under the auspices of a committee which has been formed for the purpose. Our bankers are Messrs. Ransome, Bouverie, and Co., and contributions towards this object will be gratefully received, and all further information given by Lady Virginia Sandars, Temple Combe, Henley-on-Thames, or by—

Yours faithfully,

CHARLES C. BETHUNE.
HAROLD E. BOULTON.

The Oxford House, Bethnal Green, E.